United States Department of Agriculture

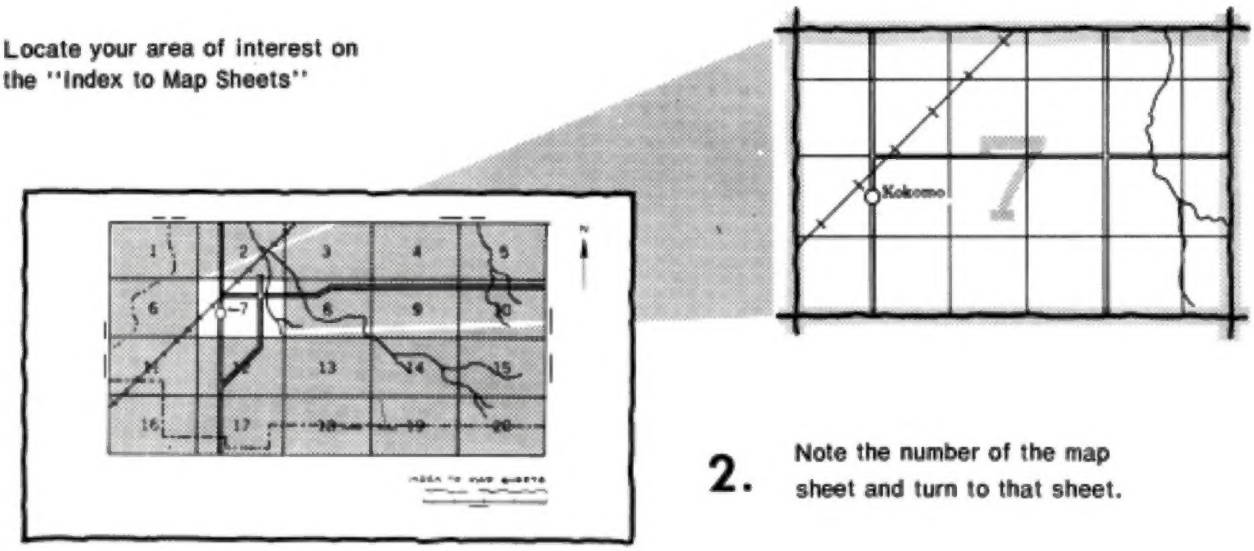
Soil Conservation Service

In cooperation with the Alabama Agricultural Experiment Station, and the Alabama Soil and Water Conservation Committee

Soil Survey of Conecuh County, Alabama

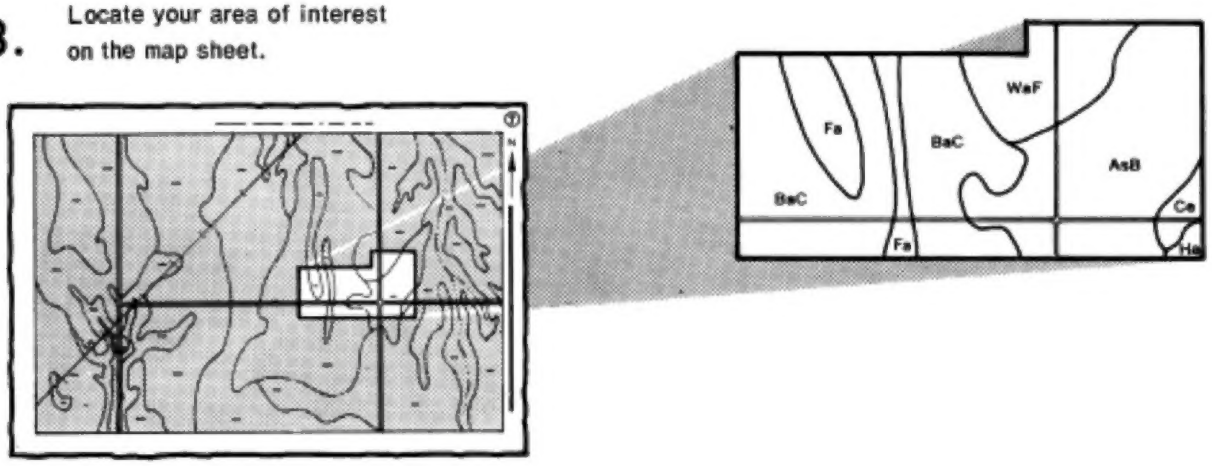
HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets"

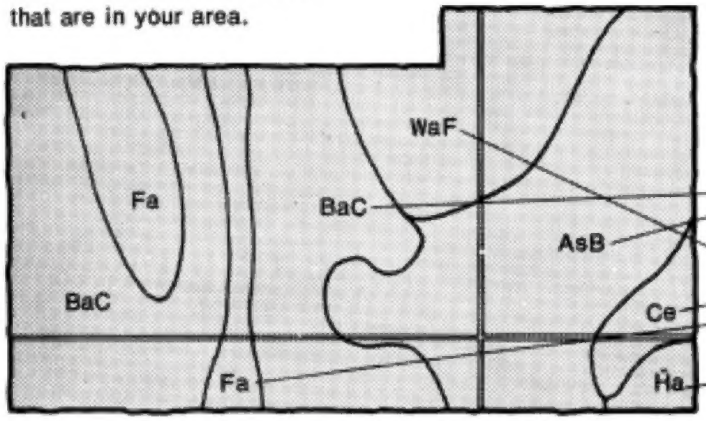


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.



4. List the map unit symbols that are in your area.

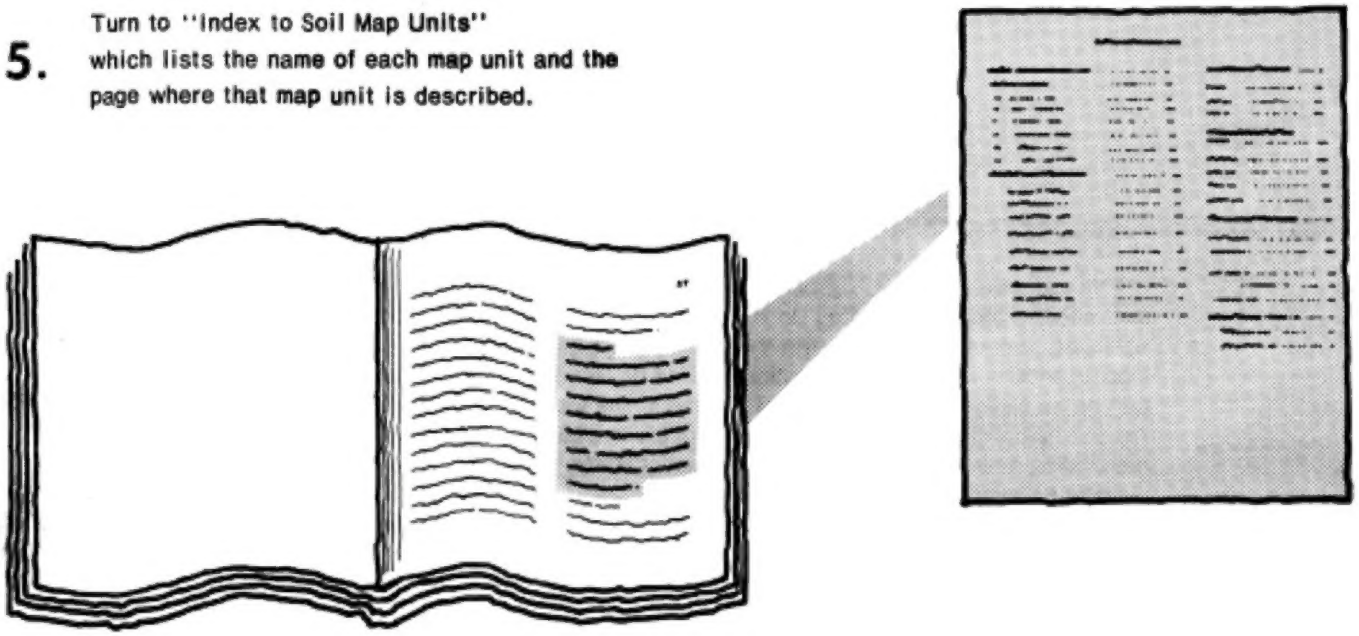


Symbols

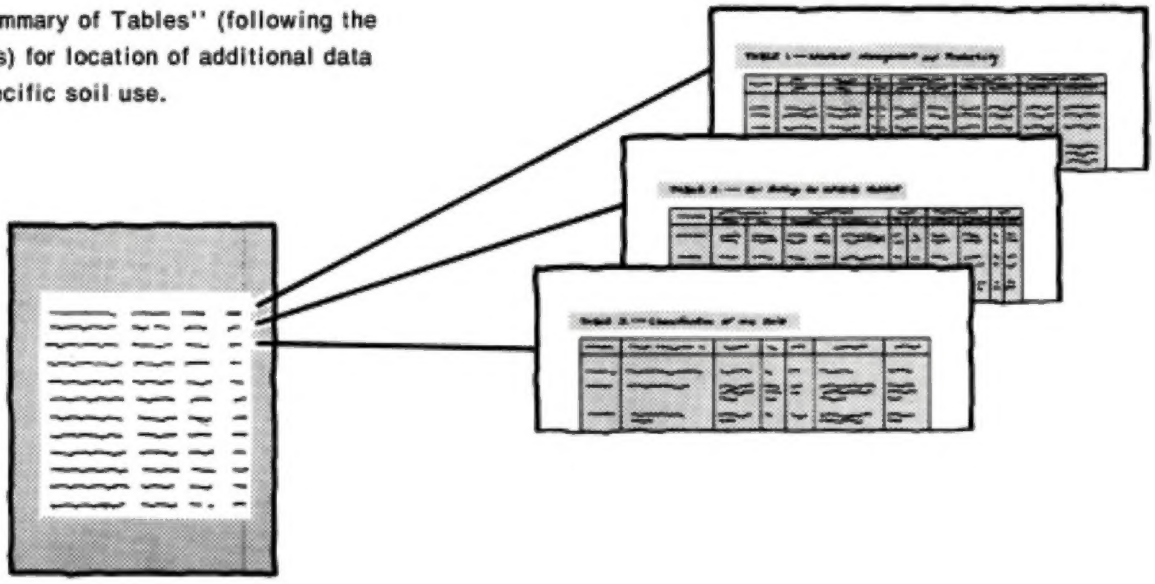
- AsB
- BaC
- Ce
- Fa
- Ha
- WaF

THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; to specialists in wildlife management, waste disposal, or pollution control.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was done in the period 1977 to 1984. Soil names and descriptions were approved in 1984. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1984. This soil survey was made cooperatively by the Soil Conservation Service, the Alabama Agricultural Experiment Station, and the Alabama Soil and Water Conservation Committee. It is part of the technical assistance furnished to the Conecuh County Soil and Water Conservation District.

All programs and services of the Soil Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: The potential productivity of loblolly pine is high in Conecuh County. This stand is in an area of Gritney-Malbis-Fuquay complex, 1 to 8 percent slopes.

Contents

Soil Series

Issued February 1989

Index to Map Units

Summary of Tables

Foreword

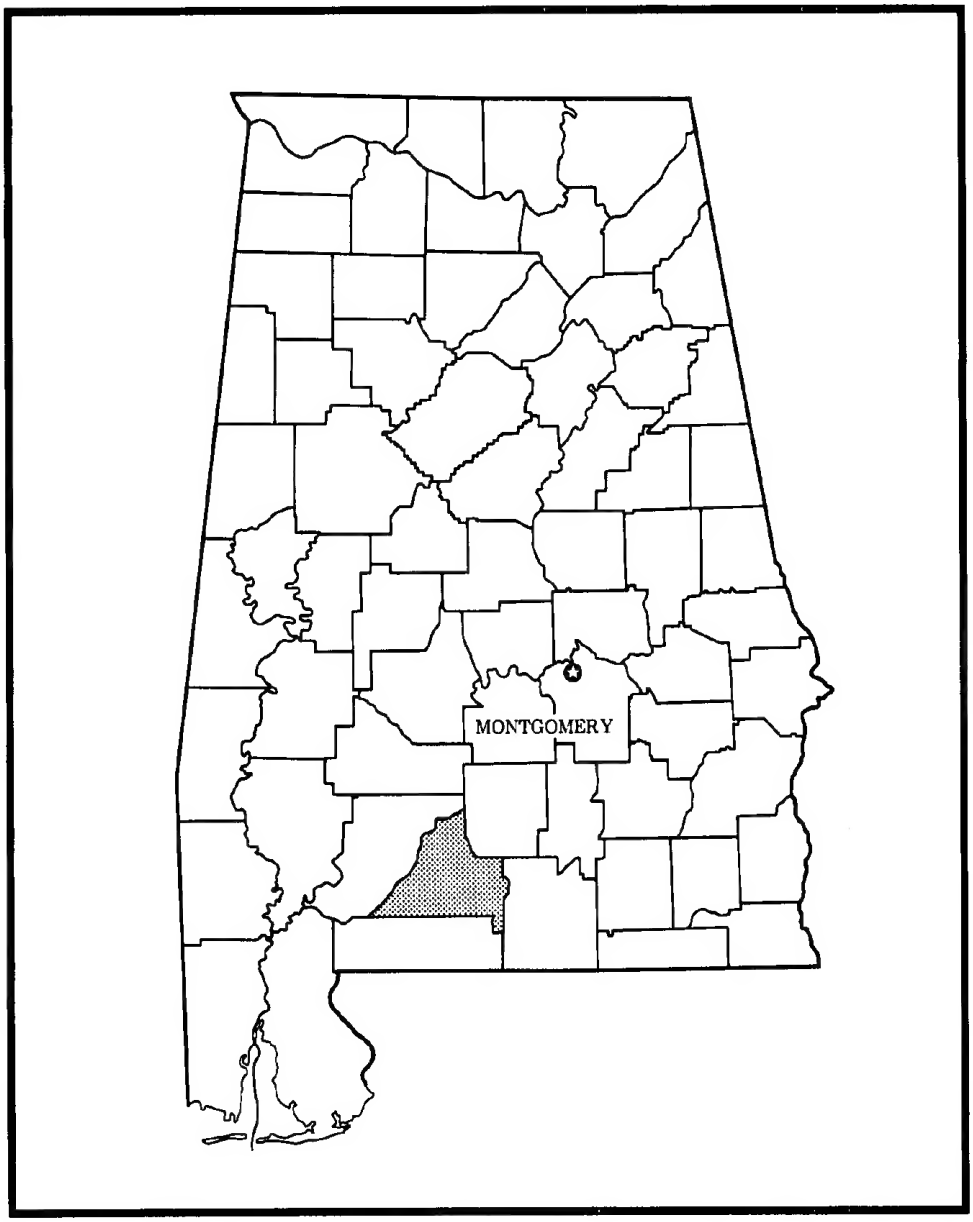
This soil survey contains information that can be used in land-planning programs in Conecuh County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.

Ernest V. Todd
State Conservationist
Soil Conservation Service



Location of Conecuh County in Alabama.

Soil Survey of Conecuh County, Alabama

By Bobby C. Fox, Soil Conservation Service

Fieldwork by Bobby C. Fox and Norman P. Marable,
Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service
In cooperation with the
Alabama Agricultural Experiment Station and the
Alabama Soil and Water Conservation Committee

CONECUH COUNTY is in the southern part of Alabama. The county's name is from the Conecuh River, which flows along the southeastern border of the county. "Conecuh" is a Muskogee Indian word that means "land of cane."

The first permanent settlement was near Belleville, 12 miles west of Evergreen, and was started by Alexander Autrey in 1815. Many of the early settlers came from the Carolinas, Georgia, and Tennessee. Hamden Ridge was made the first county seat in 1817. In 1820 the county seat was moved to Old Sparta, where it remained until it burned in 1866. It was then moved to its present location in Evergreen *(14)*.

The county is triangular and is 40 miles from north to south and 43 miles along the southern boundary. It has a total area of 546,545 acres, or 854 square miles. In 1980, the population of the county was 15,884. Evergreen had a population of 4,171 *(1)*.

Conecuh County is in the Southern Coastal Plain Land Resource Area. Elevation ranges from about 80 feet along the Conecuh River in the southeastern part of the county to about 580 feet near Midway in the northwestern part. The climate generally is humid and mild. Rainfall is plentiful and normally well distributed throughout the year.

The drainage system is well developed in the county. The Sepulga River, Conecuh River, Murder Creek, Burnt Corn Creek, and Escambia Creek are the major streams. All of these streams empty into the Escambia River before it enters the Gulf of Mexico.

The county is served by one railroad, U.S. Highways 31 and 84, Interstate 65, two state highways, and numerous county roads.

This survey updates an earlier soil survey of Conecuh County, published in 1912.

General Nature of the County

This section describes the natural resources, farm acreage and products, and climate of Conecuh County.

Natural Resources

The Conecuh County Soil Conservation District was incorporated in August 1958. Previously, this district was part of the Conecuh River Soil Conservation District.

Soil is the most important natural resource in the county. Timber products, cultivated crops, and improved pasture are marketable products that are derived from the soil.

Murder Creek, the Sepulga River, and other perennial streams, supplemented by wells and springs, provide adequate water for domestic and livestock use in most of the county. In addition, many farm ponds are throughout the county.

Sand and gravel deposits are mined in the southwestern portion of the county. This area also produces natural gas and petroleum. Mining of lignite and clay deposits could become important. Limestone and low-grade iron ore have been mined.

Farm Acreage and Products

The acreage for cultivated crops and improved pasture has been declining during the past decade. This shift in acreage can be attributed to the increasing absentee ownership of the land and the awareness of the need to prevent soil erosion on marginal land.

About 56,000 acres, or about 10 percent of Conecuh County, is used for cultivated crops, and about 43,000 acres, or about 8 percent of the county, is used as pasture. Soybeans, peanuts, corn, and wheat are the major crops. Cotton, tobacco, and other small grains are also grown. Specialty crops include strawberries, watermelons, and peas. Several pecan orchards are throughout the county. Beef cattle, dairy cattle, and hogs are the main livestock produced in Conecuh County.

Climate

Prepared by the National Climatic Data Center, Asheville, North Carolina.

Conecuh County has long, hot summers because moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short, and have only a rare cold wave that moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year, and prolonged droughts are rare. Summer precipitation, mainly afternoon thundershowers, is adequate for all crops.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Evergreen in the period 1961 to 1980. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 48 degrees F, and the average daily minimum temperature is 36 degrees. The lowest temperature on record, which occurred at Evergreen on January 24, 1963, is 5 degrees. In summer the average temperature is 80 degrees, and the average daily maximum temperature is 91 degrees. The highest recorded temperature, which occurred at Evergreen on June 15, 1963, is 106 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 64 inches. Of this, 33 inches, or about 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 23 inches. The heaviest 1-day rainfall during the period of record was 12.60 inches at Evergreen on April 10, 1975. Thunderstorms occur on about 61 days each year, and most occur in summer.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 65 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 9 miles per hour, in spring.

Locally severe storms, including tornadoes, strike occasionally in or near the county. They are of short duration and cause variable and spotty damage. Every few years in summer or autumn, a tropical depression or a remnant of a hurricane that has moved inland causes extremely heavy rainfalls for 1 to 3 days.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material from which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented

by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, acidity, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in other units but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The soils in Conecuh County vary widely in their potential for major land uses. Table 4 shows the extent of the map units shown on the general soil map. It lists the suitability of each, in relation to that of the other map units, for major land uses and shows soil properties that limit use. Soil suitability ratings are based on the practices commonly used in the survey area to overcome soil limitations. These ratings reflect the ease of overcoming the limitations. They also reflect the problems that will persist even if such practices are used.

Each map unit is rated for *cultivated crops, pasture and hayland, woodland, urban uses,* and *intensive and extensive recreation areas.* Cultivated crops are those grown extensively in the survey area. Pasture and hayland refers to areas of improved grasses that are grown locally. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments. Intensive recreation areas are campsites, picnic areas, ballfields, and other areas that are subject to heavy foot traffic. Extensive recreation areas are those used for nature study and as wilderness.

Nearly Level to Undulating Soils on Flood Plains and Stream Terraces

The two map units in this group make up about 10 percent of the county. The soils have good suitability for use as woodland. They have fair to good suitability for use as farmland and poor suitability for urban uses.

1. Izagora-Chrysler-Cahaba

Moderately well drained and well drained soils that have a loamy or clayey subsoil; formed in loamy and clayey alluvial and marine sediments

This map unit makes up about 7 percent of the county. It is about 30 percent Izagora soils, 16 percent Chrysler soils, 14 percent Cahaba soils, and 40 percent soils of minor extent.

Izagora, Chrysler, and Cahaba soils are on nearly level to undulating stream terraces in the eastern part of Conecuh County. The landscape is dissected by sloughs, depressions, small streams, and drainageways. These soils have a seasonal high water table and are subject to rare or occasional flooding. Slopes are 0 to 3 percent.

Izagora soils are on a lower elevation. These soils are moderately well drained. The surface layer is very dark grayish brown loam. The upper part of the subsoil is yellowish brown clay loam, and the lower part is mottled yellowish brown clay loam and clay.

Chrysler soils are on slightly higher, broad divides between the streams. These soils are moderately well drained. The surface layer is dark grayish brown fine sandy loam. The upper part of the subsoil is yellowish red clay, and the lower part is mottled yellowish red clay. The underlying material is stratified sandy or clayey material.

Cahaba soils are on a higher elevation on broad ridges that parallel the streams. These soils are well drained. They have a dark yellowish brown sandy loam surface layer and a red and yellowish red sandy clay loam subsoil. The underlying material is strong brown loamy sand.

Of minor extent in this map unit are the Bethera, Bigbee, Bonneau, and Yonges soils.

The soils of this map unit are used mainly as woodland (fig. 1).

2. Bibb-Bigbee-Yonges

Poorly drained and excessively drained soils that are loamy and sandy throughout, sandy throughout, or soils that have a loamy subsoil; formed in alluvial sediments

This map unit makes up about 3 percent of the county. It is about 53 percent Bibb soils, 16 percent Bigbee soils,

Figure 1.—The soils of the Izagora-Chrysler-Cahaba general soil map unit are suited to use as woodland, such as this stand of loblolly pine.

11 percent Yonges soils, and 20 percent soils of minor extent.

Bibb, Bigbee, and Yonges soils are on broad, nearly level flood plains and low stream terraces along major streams in the south-central and western parts of Conecuh County. The areas are long and narrow and are dissected by many meandering intermittent streams and sloughs. Slopes are 0 to 1 percent.

Bibb soils are on a lower elevation. These soils are poorly drained. The surface layer is very dark grayish brown and dark gray sandy loam, and the underlying material is gray and light gray sandy loam and loamy sand.

Bigbee soils are on a higher elevation. They are excessively drained. The surface layer is dark grayish brown sand, and the underlying material is yellowish brown and pale brown fine sand.

Yonges soils are on the higher flood plains and low terraces. They are poorly drained. The surface layer is dark gray loam. The subsoil is gray sandy clay loam and grayish brown clay loam that have mottles throughout.

Of minor extent in this map unit are the Bonneau and Cahaba soils.

The soils of this map unit are used mainly as woodland.

Undulating to Hilly Soils on Side Slopes and Ridges

This map unit makes up about 2 percent of the county. The soils have fair suitability for use as woodland and poor suitability for farmland and for urban uses.

3. Arundel

Well drained soils that have a clayey subsoil; formed in clayey marine sediments overlying horizontally bedded siltstone

This map unit makes up about 2 percent of the county. It is about 78 percent Arundel soils and 22 percent soils of minor extent.

Arundel soils are on gently sloping to moderately steep side slopes and narrow ridgetops in the northern part of Conecuh County. They generally are on north-

facing slopes in a northwest to southeast orientation. This landscape is moderately dissected by drainageways and small streams and has fairly uniform relief. Slopes are 4 to 25 percent.

Arundel soils are well drained. The surface layer is very dark gray loamy fine sand. The subsoil is yellowish red clay that has mottles in the lower part. The underlying material is brown, yellow, and gray siltstone bedrock.

Of minor extent in this map unit are the Conecuh, Luverne, Orangeburg, and Troup soils. Conecuh and Luverne soils are on the lower slopes and lower ridgetops. Orangeburg and Troup soils are on a higher elevation. Areas of exposed buhrstone and escarpments are also included.

The soils of this map unit are used mainly as woodland.

Undulating to Moderately Steep Soils on Ridgetops and Side Slopes

The three map units in this group make up about 73 percent of the county. The soils have good suitability for use as woodland, fair to good suitability for use as farmland, and good suitability for urban uses.

4. Malbis-Gritney-Fuquay

Well drained soils that have a loamy or clayey subsoil; formed in clayey, loamy, and sandy marine sediments

This map unit makes up about 15 percent of the county. It is about 29 percent Malbis soils, 27 percent Gritney soils, 14 percent Fuquay soils, and 30 percent soils of minor extent.

Malbis, Gritney, and Fuquay soils are on fairly broad ridgetops on the uplands in the southwestern part of Conecuh County. Small intermittent drainageways and large streams dissect areas of these soils. Slopes are 0 to 8 percent.

Malbis soils are on broad plateaus. These soils are well drained. The surface layer is dark grayish brown sandy loam. The subsoil is yellowish brown and strong brown loam and sandy clay loam. The lower part of the subsoil has mottles.

Gritney soils are on knolls and gently sloping side slopes. These soils are well drained. The surface layer is brown sandy loam, and the subsurface layer is light yellowish brown and yellowish brown sandy loam. The subsoil is yellowish red and strong brown clay loam. In some places, the subsoil is sandy clay or clay. The lower part of the subsoil has mottles.

Fuquay soils are on broad ridgetops and side slopes. These soils are well drained. The surface layer is grayish brown loamy sand, and the subsurface layer is yellowish brown loamy sand. The subsoil is yellowish brown sandy loam and sandy clay loam that has mottles and plinthite in the lower part.

Of minor extent in this map unit are the Atmore, Bibb, Orangeburg, Troup, and Saffell soils.

The soils of this map unit are used mainly as woodland (fig. 2). A few areas have been cleared and are used for hay and pasture.

5. Orangeburg-Troup-Greenville

Well drained soils that have a loamy or clayey subsoil or a thick sandy subsurface layer and a loamy subsoil; formed in loamy, sandy, and clayey marine sediments

This map unit makes up about 45 percent of the county. It is about 32 percent Orangeburg soils, 24 percent Troup soils, 22 percent Greenville soils, and 22 percent soils of minor extent.

Orangeburg, Troup, and Greenville soils are on broad ridgetops and moderately steep side slopes mainly in the northwestern and central part of Conecuh County. They are dissected by intermittent drainageways and large streams. Slopes are 0 to 8 percent.

Orangeburg soils are on nearly level to gently sloping ridgetops and side slopes. These soils are well drained. The surface layer is dark grayish brown sandy loam. The subsoil is yellowish red and red sandy clay loam.

Troup soils are on gently sloping to sloping side slopes. These soils are well drained. The surface layer is dark brown loamy sand. The subsurface layer is yellowish brown and strong brown loamy sand. The subsoil is red sandy clay loam.

Greenville soils are on nearly level to gently sloping, broad ridgetops. These soils are well drained. The surface layer is dark reddish brown sandy loam. The subsoil is dark red sandy clay.

Of minor extent in this map unit are the Arundel, Bibb, Fuquay, and Red Bay soils.

The soils of this map unit are used as cropland and woodland. Some areas are used for urban development.

6. Orangeburg-Troup

Well drained soils that have a loamy subsoil or a thick sandy subsurface layer and a loamy subsoil; formed in loamy and sandy marine sediments

This map unit makes up about 13 percent of the county. It is about 43 percent Orangeburg soils, 22 percent Troup soils, and 35 percent soils of minor extent.

Orangeburg and Troup soils are on broad ridgetops and narrow side slopes in the eastern and south-central parts of Conecuh County. They are dissected by drainageways and small streams. Slopes are 8 to 25 percent.

Orangeburg soils are on nearly level to gently sloping, narrow to broad ridgetops. These soils are well drained. The surface layer is dark grayish brown sandy loam. The subsoil is yellowish red and red sandy clay loam.

Troup soils are on gently sloping to moderately steep ridgetops and side slopes. These soils are well drained.

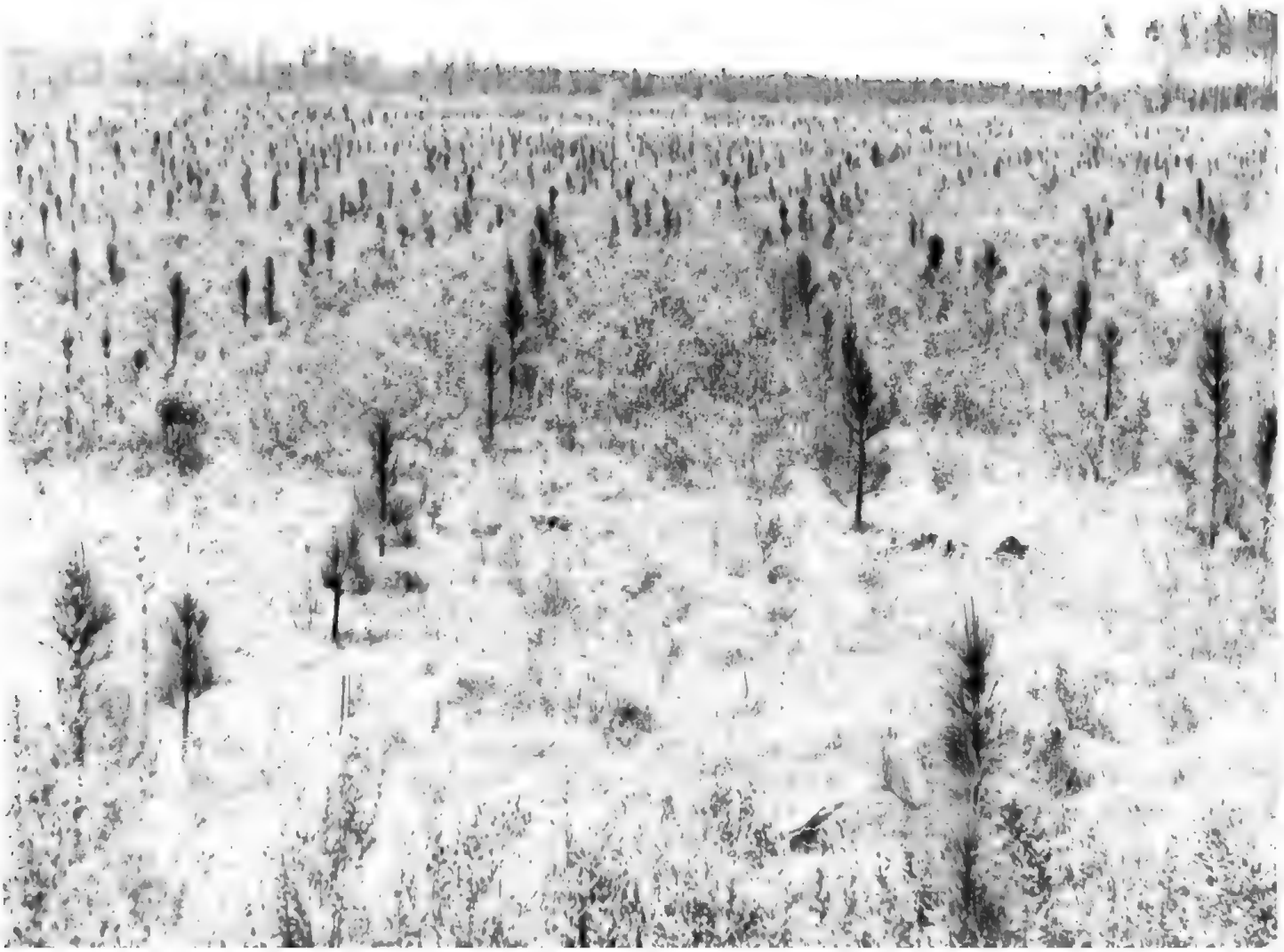


Figure 2.—Loblolly pine has been planted after clear-cutting in this area of the Malbis-Gritney-Fuquay general soil map unit.

The surface layer is loamy sand. The subsurface layer is yellowish brown and strong brown loamy sand. The subsoil is red sandy clay loam.

Of minor extent in this map unit are the Greenville and Malbis soils.

The soils of this map unit are used mainly as cropland, pasture, and woodland.

Undulating to Gently Rolling Soils on Ridges and Plateaus

The two map units in this group make up about 15 percent of the county. The soils have good suitability for use as woodland and poor suitability for farmland and for urban uses.

7. Luverne-Conecuh

Well drained and moderately well drained soils that have a clayey subsoil; formed in clayey marine sediments

This map unit makes up about 5 percent of the county. It is about 76 percent Luverne soils, 20 percent Conecuh soils, and 4 percent soils of minor extent.

These soils are on broad, gently sloping ridgetops and sloping side slopes in the northern part of Conecuh County. They are dissected by intermittent drainageways and perennial streams. Slopes are 2 to 15 percent.

Luverne soils are on gently sloping to sloping ridgetops and side slopes. These soils are well drained. The surface layer is yellowish brown sandy loam, and the subsoil is yellowish red clay. The lower part of the subsoil is yellowish red clay loam that has mottles. The underlying material is stratified sand, silt, and clay.

Conecuh soils are on nearly level to gently rolling, lower ridgetops and toe slopes. These soils are moderately well drained. The surface layer is yellowish brown sandy loam, and the subsoil is red clay. The lower part of the subsoil has mottles. The underlying material is generally clay.

Of minor extent in this map unit are the Arundel, Izagora, and Orangeburg soils.

The soils of this map unit are used mainly as woodland. A few small areas are used as pasture.

8. Oktibbeha-Cadeville-Yonges

Moderately well drained and poorly drained soils that have a clayey or loamy subsoil; formed in clayey and loamy marine and alluvial sediments

This map unit makes up about 10 percent of the county. It is 44 percent Oktibbeha soils, 14 percent Cadeville soils, 13 percent Yonges soils, and 29 percent soils of minor extent.

These soils are on broad flats, toe slopes, and low terraces in the central part of Conecuh County and also along Burnt Corn Creek. They are dissected by intermittent drainageways and perennial streams. Slopes are 0 to 8 percent.

Oktibbeha soils are on nearly level to gently sloping ridges. These soils are moderately well drained. The surface layer is very dark grayish brown clay loam, and the subsoil is red clay. The lower part of the subsoil has mottles. The underlying material is yellowish brown clay that has calcium carbonate concretions.

Cadeville soils are on nearly level to gently sloping, lower slopes. These soils are moderately well drained. The surface layer is dark brown fine sandy loam, and the subsoil is yellowish red and light brownish gray clay. The subsoil has mottles throughout. The underlying material is gray silty clay that has mottles.

Yonges soils are on nearly level, low stream terraces and along drainageways. These soils are poorly drained. The surface layer is dark gray loam, and the subsoil is gray sandy clay loam and clay loam. The subsoil has mottles throughout.

Of minor extent in this map unit are the Orangeburg and Saffell soils.

The soils of this map unit are used mainly as woodland and pasture.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and Management of the Soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Greenville sandy loam, 1 to 5 percent slopes, is one of several phases in the Greenville series.

Some map units are made up of two or more major soils. These map units are called soil complexes or soil associations.

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Oktibbeha-Cadeville complex, 1 to 8 percent slopes, is an example.

A *soil association* is made up of two or more geographically associated soils that are shown as one unit on the maps. Because of present or anticipated soil uses in the survey area, it was not considered practical or necessary to map the soils separately. The pattern and relative proportion of the soils are somewhat similar. Troup-Orangeburg association, 8 to 25 percent slopes, is an example.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

ArE—Arundel loamy fine sand, 4 to 25 percent slopes. This soil is moderately deep, well drained, and moderately steep. It is on narrow upland ridges and side slopes in the northern part of the county. Individual areas range from 100 to 500 acres or more. Slopes are complex and convex.

Typically, the surface layer is very dark gray loamy fine sand about 7 inches thick. The subsoil extends to a depth of 24 inches. It is yellowish red clay to a depth of 16 inches, and below that it is yellowish red clay that has yellowish brown and pale brown mottles. The underlying material is moderately hard siltstone bedrock to a depth of more than 60 inches.

Important soil properties:

Permeability: very slow
Available water capacity: low
Reaction: extremely acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: 24 inches
Root zone: to a depth of 24 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Conecuh, Orangeburg, and Troup soils. Also included are areas of soils that are similar to Arundel soil except they have more than 20 percent cobbles or they are less than 20 inches deep to bedrock. These included soils make up about 25 percent of the map unit, but individual areas are less than 10 acres. Orangeburg and Troup soils are contrasting soils, and their use and management differ from those of Arundel soil. The contrasting soils make up about 10 percent of the map unit.

This Arundel soil is used as woodland.

This soil is not suited to cultivated crops. Slope and the clayey subsoil are limitations. Erosion is a severe hazard.

This soil is poorly suited to pasture and hay. Erosion is a severe hazard. Mowing pastures for weed and brush control and cutting forage is restricted in areas of the included soils that are cobbly.

This soil is suited to the production of loblolly pine. Sweetgum and shortleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 85. The understory is mainly greenbrier, little bluestem, lespedeza, huckleberry, and flowering dogwood.

Equipment use limitations, plant competition, and the hazards of erosion and windthrow are concerns in managing timber. The moderate hazard of erosion and moderate limitation for equipment use are caused by the steepness of slope and the clayey subsoil. Management activities should include conservation practices to control soil erosion. Site preparation methods that minimize soil disturbance are needed. Tracked equipment should be used on steep slopes. A moderate windthrow hazard is caused by the depth to bedrock. Heavy thinnings should be avoided. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is not suited to use as sites for buildings and sanitary facilities. Depth to bedrock, permeability, the clayey subsoil, and slope are severe limitations that are very difficult to overcome. Low strength is a severe limitation for local roads and streets.

This Arundel soil is in capability subclass VIIe, and the woodland ordination symbol is 8C.

AtA—Atmore fine sandy loam, 0 to 2 percent slopes. This soil is deep, poorly drained, and nearly level. It is in upland depressions, at heads of drainageways, and on toe slopes in the southwestern part of the county. Individual areas range from 5 to 200 acres. Slopes are smooth and convex.

Typically, the surface layer is dark gray fine sandy loam about 4 inches thick. The subsurface layer extends to a depth of 14 inches. It is light brownish gray fine sandy loam. The subsoil extends to a depth of 62 inches. To a depth of 25 inches, it is light brownish gray loam. To a depth of 38 inches, it is light gray loam that has 15 to 20 percent plinthite, by volume. Below that, the subsoil is clay loam mottled in shades of gray, brown, and red and has 10 percent, by volume, plinthite.

Important soil properties:

Permeability: moderately slow
Available water capacity: moderate
Reaction: extremely acid to strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of 25 inches
High water table: 0 to 12 inches below the surface
Flooding: none

Included with this soil in mapping are a few small areas of Bibb, Fuquay, Gritney, and Malbis soils. These included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres.

This Atmore soil is used primarily as woodland. Some areas are used as pasture.

This soil is poorly suited to cultivated crops and suited to pasture and hay. Wetness is a limitation. Only crops that are water-tolerant should be planted on this soil. Subsurface and surface drains help to lower the seasonal high water table. Deferred grazing during wet periods prevents some soil compaction and helps keep the pasture and the soil in good condition.

This soil is suited to the production of loblolly pine and slash pine. Sweetgum is also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly greenbrier, gallberry, waxmyrtle, blackgum, sweetbay, and plumegrass.

Severe equipment use limitations, caused by a high water table, and plant competition are concerns in managing timber on this soil. Seedling mortality is moderate. Harvesting should be limited to periods when the soil is dry. To overcome seedling mortality, trees can either be planted on beds or the planting rate can be increased. Competition by undesirable plants can prevent adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is poorly suited to use as sites for buildings and sanitary facilities. Wetness is a severe limitation and is difficult to overcome.

This Atmore soil is in capability subclass IVw, and the woodland ordination symbol is 9W.

BbA—Bibb sandy loam, 0 to 1 percent slopes, frequently flooded. This soil is deep, poorly drained, and nearly level. It is on flood plains along many streams in the county. Individual areas are long and narrow and range from 100 to 1,000 acres or more.

Typically, the surface layer is very dark grayish brown and dark gray sandy loam about 10 inches thick. The underlying material is gray and light gray sandy loam and loamy sand to a depth of more than 60 inches.

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 6 to 18 inches below the surface
Flooding: frequent

Included with this soil in mapping are a few areas of soils that are similar to Bibb soil except they are either better drained or more clayey in the underlying material. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 10 acres. Those soils that are better drained are contrasting soils, and their use and management differ from those of Bibb soil. The contrasting soils make up about 10 percent of the map unit.

This Bibb soil is used primarily as woodland.

This soil is not suited to cultivated crops, pasture, or hay because of wetness and frequency of flooding.

This soil is suited to the production of loblolly pine, sweetgum, and water oak. Blackgum and sweetbay are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is gallberry, blackgum, plumegrass, panicum, and sweetbay.

Severe equipment use limitations and seedling mortality, caused by a high water table and flooding, are concerns in managing timber on this soil. Plant competition and windthrow hazard are also severe. Management activities should be limited to periods when the soil is dry. To overcome seedling mortality, trees can either be planted on beds or the planting rate can be increased. Heavy thinnings should be avoided to reduce windthrow. Competition by undesirable plants can prevent adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is poorly suited to use as sites for buildings and sanitary facilities because of flooding and wetness. These problems are very difficult to overcome.

The Bibb soil is in capability subclass Vw, and the woodland ordination symbol is 9W.

BgA—Bigbee sand, 0 to 1 percent slopes, rarely flooded. This soil is deep, nearly level, and excessively drained. It is on terraces along major streams in the county. Individual areas range from 40 to 100 acres or more. Slopes are smooth and slightly concave.

Typically, the surface layer is dark grayish brown sand 6 inches thick. The underlying material is yellowish brown fine sand to a depth of 23 inches, brownish yellow fine sand to a depth of 43 inches, and very pale brown fine sand to a depth of 80 inches.

Important soil properties:

Permeability: rapid
Available water capacity: very low
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 42 to 60 inches below the surface
Flooding: rare

Included with this soil in mapping are a few areas of Bonneau, Cahaba, Chrysler, and Izagora soils. The included soils make up about 25 percent of the map unit, but individual areas are generally less than 10 acres. These included soils are contrasting soils, and their use and management differ from those of Bigbee soil.

This Bigbee soil is used primarily as woodland. In some areas, it is used as pasture and hayland.

This soil is poorly suited to cultivated crops because of the low available water capacity.

This soil is suited to pasture and hay; however, the low available water capacity is a limitation. This soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. Deferred grazing during dry periods helps keep the soil in good condition.

This soil is suited to the production of loblolly pine and longleaf pine. Post oak and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 80. The understory is grassleaf goldaster, post oak, threeawn, little bluestem, and water oak.

The sandy texture of Bigbee soil causes moderate equipment use limitations in managing timber on this soil by restricting the use of wheeled equipment, especially if the soil is very dry. Harvesting should be limited to periods when the soil is moist. Droughtiness causes moderate seedling mortality. Increasing the rate of tree planting can partly overcome this limitation. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is poorly suited to use as sites for buildings and sanitary facilities because of flooding and seepage. These problems are difficult to overcome. This soil is a probable source of sand.

This Bigbee soil is in capability subclass IIIs, and the woodland ordination symbol is 8S.

BoA—Bonneau loamy sand, 0 to 2 percent slopes. This soil is deep, nearly level, and well drained. It is on terraces along major streams in the county. Individual areas range from 40 to 100 acres or more. Slopes are smooth and slightly concave.

Typically, the surface layer is dark gray and dark grayish brown loamy sand about 10 inches thick. The subsurface layer is light yellowish brown loamy sand to a depth of about 28 inches. The subsoil extends to a depth of 72 inches. It is yellowish brown sandy clay loam to a depth of about 53 inches, and below that it is sandy clay loam mottled in shades of brown, yellow, gray, and red.

Important soil properties:

Permeability: moderate
Available water capacity: low to moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 42 to 60 inches below the surface
Flooding: none

Included with this soil in mapping are areas of Bigbee, Cahaba, and Chrysler soils. The included soils make up about 25 percent of the map unit, but individual areas are generally less than 10 acres. Bigbee and Chrysler soils are contrasting soils, and their use and management differ from those of Bonneau soil. The contrasting soils make up about 15 percent of the map unit.

This Bonneau soil is primarily used as woodland. Some areas have been cleared and are used for cultivated crops, hay, or pasture.

This soil is suited to cultivated crops; however, the low available water capacity of the surface and subsurface layers is a limitation. The hazard of erosion is slight, but this soil is subject to gully erosion in areas that have a concentration of water. If the soil is tilled, a plowpan forms and restricts root growth of some annual crops. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay; however, the low available water capacity of the surface and subsurface layers is a limitation. This soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. Deferred grazing during dry periods helps keep the soil in good condition.

This soil is suited to the production of loblolly pine and longleaf pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 85. The understory is mainly little bluestem, threeawn, water oak, and sweetgum.

Moderate equipment use limitations, seedling mortality, and plant competition are concerns in managing timber on this soil. The thick sandy surface layer restricts the use of wheeled equipment, especially if the soil is very dry. Harvesting should be limited to periods when the soil is moist. Droughtiness causes moderate seedling mortality. Increasing the tree planting rate can partly overcome this limitation. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Seepage severely limits the use of this soil as sewage lagoon areas and is difficult to overcome. Wetness moderately limits most other uses but can be overcome by proper design.

This Bonneau soil is in capability subclass IIs, and the woodland ordination symbol is 8S.

CaA—Cahaba sandy loam, 0 to 3 percent slopes, rarely flooded. This soil is deep, nearly level, and well drained. It is on major stream terraces in the southeastern part of the county. Individual areas range from 5 to 100 acres. Slopes are smooth and slightly convex.

Typically, the surface layer is dark yellowish brown sandy loam about 6 inches thick. The next layer is yellowish red sandy loam to a depth of about 14 inches. The subsoil extends to a depth of 37 inches. It is red sandy clay loam to a depth of about 28 inches and yellowish red sandy loam below that. The underlying material is strong brown loamy sand to a depth of 72 inches.

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: rare

Included with this soil in mapping are small areas of Bigbee, Bonneau, and Chrysler soils. Also included are soils that are similar to Cahaba soil except they have either a yellow subsoil or a less clayey subsoil. The included soils make up about 25 percent of the map unit, but individual areas are generally less than 10 acres. Bigbee and Chrysler soils are contrasting soils, and their use and management differ from those of Cahaba soil. The contrasting soils make up about 15 percent of the map unit.

This Cahaba soil is primarily used as woodland. Some areas have been cleared and are used for cultivated crops, hay, or pasture.

This soil is well suited to cultivated crops. The hazard of erosion is slight. This soil responds well to conservation tillage. If the soil is tilled, plowpans form

and restrict root growth of some annual crops. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine and slash pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly little bluestem, panicum, American holly, longleaf uniola, flowering dogwood, and lespedeza.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is not suited to use as sites for buildings and sanitary facilities because of seepage and flooding.

This Cahaba soil is in capability class I, and the woodland ordination symbol is 9A.

CbA—Cahaba-Bigbee complex, 0 to 2 percent slopes, rarely flooded. This complex consists of deep, nearly level, excessively drained Bigbee soil and well drained Cahaba soil on major stream terraces throughout the county. Individual areas range from 40 to more than 1,500 acres. Slopes are smooth and slightly convex or slightly concave. The areas of these soils are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Cahaba soil and similar soils make up about 50 percent of the map unit. Typically, the surface layer is dark yellowish brown sandy loam about 6 inches thick. The next layer is yellowish red sandy loam to a depth of about 12 inches. The subsoil extends to a depth of 37 inches. It is red sandy clay loam to a depth of about 28 inches and yellowish red sandy loam below that. The underlying material is strong brown loamy sand to a depth of 80 inches.

The Bigbee soil and similar soils make up about 35 percent of the map unit. Typically, the surface layer is dark grayish brown sand about 6 inches thick. The underlying material is fine sand. It is yellowish brown to a depth of about 23 inches, brownish yellow to a depth of about 43 inches, and very pale brown to a depth of about 80 inches. Soils similar to Bigbee soil are underlain by loamy material.

Important properties of Cahaba soil:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: rare

Important properties of Bigbee soil:

Permeability: rapid
Available water capacity: very low
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 42 to 60 inches below the surface
Flooding: rare

Included in mapping are areas of Bonneau, Chrysler, and Yonges soils. Also included are soils that are similar to Cahaba soil, but that have a yellowish brown subsoil. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 10 acres. Chrysler and Yonges soils are contrasting soils, and their use and management differ from those of Bigbee and Cahaba soils. The contrasting soils make up about 10 percent of the map unit.

The Cahaba and Bigbee soils are used primarily as woodland. Some areas have been cleared and are used as pasture or for cultivated crops.

These soils are suited to cultivated crops; however, the low available water capacity and droughtiness of the Bigbee soil limit the use of this soil for crops. Plant nutrients are readily leached from the root zone. Frequent, light applications of fertilizer are required to produce maximum yields. The Cahaba soil is well suited to most crops grown in Conecuh County.

These soils are suited to pasture and hay. The low available water capacity of the Bigbee soil is a limitation; therefore, this soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. Deferred grazing during dry periods helps keep the soil in good condition. The Cahaba soil has no significant limitations for this use.

This map unit is suited to the production of loblolly pine and longleaf pine. Sweetgum and slash pine are also grown. On the basis of a 50-year site curve, the mean site for loblolly pine is 90 on the Cahaba soil and 80 on the Bigbee soil. The understory is mainly little bluestem, American holly, huckleberry, waxmyrtle, grassleaf goldaster, and water oak.

Moderate equipment use limitations are a concern in managing timber on the Bigbee soil because of the thick sandy surface layer. Management activities should be conducted during periods when the soil is moist. Droughtiness causes severe seedling mortality on the Bigbee soil. Increasing the rate of tree planting can partly overcome this limitation. Plant competition is moderate in this complex. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are not suited to use as sites for buildings and sanitary facilities because of wetness, seepage, and flooding. These problems are difficult to overcome.

The Cahaba soil is in capability class I, and the woodland ordination symbol is 9A. The Bigbee soil is in capability subclass IIIs, and the woodland ordination symbol is 8S.

ChA—Chrysler, occasionally flooded-Yonges, frequently flooded association, 0 to 2 percent slopes. This association consists of deep, nearly level, moderately well drained Chrysler soil and poorly drained Yonges soil on major stream terraces in the southeastern part of the county. Individual areas range from 300 to more than 1,000 acres. Slopes are smooth and slightly convex and slightly concave. The areas of these soils are too mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Chrysler soil and similar soils make up about 50 percent of the map unit. Typically, the surface layer is dark grayish brown fine sandy loam about 6 inches thick. The subsoil extends to a depth of 72 inches. It is yellowish red clay to a depth of about 23 inches and mottled red, gray, and brown clay below that. The underlying material is mottled in shades of gray, red, and brown stratified loamy and clayey material. Soils similar to the Chrysler soil have a loamy subsoil throughout.

The Yonges soil and similar soils make up about 30 percent of the map unit. Typically, the surface layer is dark gray loam about 3 inches thick. The subsurface layer extends to a depth of 7 inches. It is light gray sandy loam. The subsoil extends to a depth of 77 inches. It is light brownish gray sandy clay loam to a depth of about 17 inches, grayish brown clay loam to a depth of about 42 inches, light olive gray sandy clay loam to a depth of about 57 inches, and mottled gray, yellow, and brown sandy loam below that. The underlying material to a depth of 90 inches is dark gray sandy loam.

Important properties of Chrysler soil:

Permeability: slow
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 18 to 36 inches below the surface
Flooding: occasional

Important properties of Yonges soil:

Permeability: moderately slow
Available water capacity: moderate
Reaction: strongly acid to neutral in the upper part and slightly acid to moderately alkaline in the lower part
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 0 to 12 inches below the surface
Flooding: frequent

Included in mapping are areas of Bigbee, Bonneau, and Cahaba soils. Also included are areas of very poorly drained soils in depressions. The included soils make up about 20 percent of the map unit, but individual areas are generally less than 10 acres. Bigbee and Bonneau soils are contrasting soils, and their use and management differ from those of Chrysler and Yonges soil. They make up about 10 percent of the map unit.

The Chrysler and Yonges soils are used primarily as woodland. Some areas have been cleared and are used as pasture or for cultivated crops.

These soils are suited to cultivated crops. The seasonal high water table limits the use of both soils for crops, and flooding is a hazard. Subsurface and surface drains help to lower the seasonal high water table. Wetness of the Chrysler soil seldom interferes with cultivation of common, full-season crops. If the Chrysler soil is to be tilled in winter and early in spring, subsurface drains should be used to lower the seasonal water table. Recommended spacings for subsurface drains are 80 to 120 feet for the Chrysler soil. Only crops that are water tolerant should be planted on the Yonges soil. Recommended spacings are 60 to 160 feet for subsurface drains and 100 to 160 feet for surface drains for the Yonges soil.

These soils are suited to pasture and hay. Fertilizing and harvesting depend on soil wetness. Deferred grazing during wet periods prevents some soil compaction and helps keep the pasture and the soil in good condition.

This map unit is suited to the production of loblolly pine and slash pine. American sycamore, sweetgum, and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 100 on both the Chrysler and Yonges soils. The understory is mainly gallberry, American holly, palmetto, greenbrier, waxmyrtle, sweetbay, and huckleberry.

Because of wetness, equipment use limitations for managing timber are moderate on the Chrysler soil and severe on the Yonges soil. Management activities should be conducted during periods when the soils are dry. Wetness and flooding cause severe seedling mortality on the Yonges soil. To overcome seedling mortality, trees can either be planted on beds or the planting rate can be increased. The windthrow hazard is moderate on the Yonges soil because this soil is saturated in winter and early in spring. Heavy thinnings should be avoided on this soil. Plant competition is severe on both soils and can prevent adequate natural or artificial reforestation.

Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are not suited to use as sites for buildings and sanitary facilities because of wetness and flooding. These problems are difficult to overcome. Low strength is a severe limitation for local roads and streets on the Chrysler soil.

The Chrysler soil is in capability subclass IIw. The Yonges soil is in capability subclass VIw. The woodland ordination symbol for both soils is 11W.

CoC—Conecuh sandy loam, 2 to 8 percent slopes. This soil is deep, gently sloping or sloping, and moderately well drained. It is on broad ridges in the northern part of the county. Individual areas range from 100 to more than 1,000 acres. Slopes are smooth and convex.

Typically, the surface layer is yellowish brown sandy loam about 3 inches thick. The subsoil is clay. It extends to a depth of 50 inches. It is red to a depth of 43 inches and is mottled in shades of red, gray, and brown below that. The underlying material to a depth of about 72 inches is stratified clayey and loamy material mottled in shades of red, yellow, and gray.

Important soil properties:

Permeability: very slow
Available water capacity: moderate
Reaction: extremely acid to strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Arundel and Luverne soils. Also included are areas of soils that are similar to Conecuh soil except they have siltstone at a depth of 40 to 60 inches. The included soils make up about 10 percent of the map unit, but individual areas are generally less than 5 acres. Luverne soils are contrasting soils, and their use and management differ from those of Conecuh soil. The contrasting soils make up about 5 percent of the map unit.

This Conecuh soil is used primarily as woodland. Some areas have been cleared and are used for cultivated crops or as pasture or hayland.

This soil is poorly suited to cultivated crops. Slope is a limitation. Erosion is a moderate hazard. If this soil is cultivated, conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion. Terraces also help to control erosion, but the undulating surface in some areas makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

This soil is suited to pasture and hay, but the hazard of erosion is a concern in management.

This soil is well suited to the production of loblolly pine. Shortleaf pine, sweetgum, and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly greenbrier, yellow jessamine, longleaf uniola, huckleberry, little bluestem, muscadine grape, and flowering dogwood.

Equipment use limitations are moderate and plant competition is severe for managing timber on this soil. The clayey subsoil restricts the use of equipment if the soil is wet. Management activities should be planned during periods when the soil is dry. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is not suited to use as sites for buildings and sanitary facilities. Very slow permeability severely limits the use of this soil as sites for septic tank absorption fields and is difficult to overcome. Low strength is a severe limitation for local roads and streets. Shrinking and swelling and the clayey subsoil severely limit most other urban uses. They are also difficult to overcome.

This Conecuh soil is in capability subclass IVe, and the woodland ordination symbol is 9C.

CwC—Cowarts sandy loam, 2 to 8 percent slopes. This soil is deep, well drained, and gently sloping. It is on ridges, knolls, and choppy side slopes in the southeastern part of the county. Individual areas range from 40 to more than 200 acres. Slopes are complex and convex.

Typically, the surface layer is brown sandy loam about 6 inches thick. The next layer is yellowish brown sandy loam to a depth of 11 inches. The subsoil extends to a depth of 33 inches. It is yellowish brown sandy clay loam to a depth of about 18 inches, yellowish brown clay loam that has strong brown and red mottles to a depth of about 25 inches, and clay loam that is mottled in shades of brown, red, and gray below that. The underlying material to a depth of about 60 inches is clay loam mottled in shades of brown, gray, and red.

Important soil properties:

Permeability: slow
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Fuquay, Malbis, Orangeburg, and Troup soils. The

included soils make up about 25 percent of the map unit, but individual areas are generally less than 10 acres. Fuquay, Orangeburg, and Troup soils are contrasting soils, and their use and management differ from those of Cowarts soil. The contrasting soils make up about 15 percent of the map unit.

This Cowarts soil is used primarily as woodland. Some areas have been cleared and are used for cultivated crops or as pasture or hayland.

This soil is well suited to cultivated crops. Slope is a limitation. Erosion is a moderate hazard. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion, but the undulating surface in some areas makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine, slash pine, and longleaf pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 85. The understory is mainly little bluestem, greenbrier, panicum, tickclover, threeawn, and flowering dogwood.

Plant competition is a moderate limitation for the management of timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. The slow permeability severely limits the use of this soil for septic tank absorption fields and is difficult to overcome. Slope moderately limits most other urban uses. This limitation can generally be overcome by proper design.

This Cowarts soil is in capability subclass IIIe, and the woodland ordination symbol is 8A.

FuB—Fuquay loamy sand, 0 to 5 percent slopes. This soil is deep, well drained, and nearly level to gently sloping. It is on lower side slopes and broad ridgetops throughout the county. Individual areas range from 20 to more than 200 acres. Slopes are smooth and slightly convex.

Typically, the surface layer is grayish brown loamy sand about 6 inches thick. The subsurface layer is yellowish brown loamy sand to a depth of about 29 inches. The subsoil extends to a depth of 75 inches. It is yellowish brown sandy loam and sandy clay loam to a depth of about 41 inches, and below that it is sandy clay loam that is mottled in shades of brown, red, and gray. It has 15 percent, by volume, plinthite below a depth of 41 inches.

Important soil properties:

Permeability: slow
Available water capacity: low in the surface and subsurface layers and moderate in the subsoil
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 48 to 60 inches below the surface
Flooding: none

Included with this soil in mapping are small areas of Gritney, Malbis, Orangeburg, and Troup soils. These included soils are contrasting soils, and their use and management differ from those of Fuquay soil. They make up about 15 percent of the map unit, but individual areas are generally less than 10 acres.

This Fuquay soil is primarily used as woodland. Some areas have been cleared and are used for cultivated crops, hay, or pasture.

This soil is suited to cultivated crops. The low available water capacity of the surface and subsurface layers is a limitation. The hazard of erosion is slight or moderate, and this soil is subject to gully erosion in areas that have a concentration of water. If the soil is tilled, plowpans form and restrict root growth of some annual crops. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. The low available water capacity of the surface and subsurface layers is a limitation; therefore, this soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. Deferred grazing during dry periods helps keep the soil in good condition.

This soil is suited to the production of loblolly pine, slash pine, and longleaf pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 85. The understory is mainly little bluestem, gallberry, greenbrier, common persimmon, American holly, and flowering dogwood.

Moderate equipment use limitations, seedling mortality, and plant competition are the main concerns in managing timber on this soil. The thick sandy surface layer restricts the use of wheeled equipment, especially if the soil is very dry. Harvesting should be planned during periods when the soil is moist. Droughtiness causes moderate seedling mortality. Increasing the rate of tree planting can partly overcome this limitation. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Slow permeability moderately limits the use of this soil as sites for septic tank absorption fields but this limitation can generally be overcome by increasing the size of the field.

This Fuquay soil is in capability subclass IIs, and the woodland ordination symbol is 8S.

GrA—Greenville sandy loam, 0 to 1 percent slopes. This soil is deep, well drained, and nearly level. It is on broad ridges in the north-central part of the county. Individual areas range from 10 to more than 150 acres. Slopes are long, smooth, and slightly convex and slightly concave.

Typically, the surface layer is dark reddish brown sandy loam about 5 inches thick. The next layer is dusky red sandy loam to a depth of 9 inches. The subsoil is dark red clay and sandy clay to a depth of 80 inches.

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are a few small areas of Malbis, Orangeburg, and Red Bay soils. Also included are soils similar to Greenville soil except that the lower part of the subsoil is yellowish red or the subsoil decreases in clay content with depth. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres. Malbis soils are contrasting soils, and their use and management differ from those of Greenville soil. The contrasting soils make up about 5 percent of the map unit.

This Greenville soil is used primarily for cultivated crops or as pasture or hayland. In some areas, it is used as woodland.

This soil is well suited to cultivated crops. The hazard of erosion is slight. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Slash pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 85. The understory is mainly greenbrier, little bluestem, huckleberry, muscadine grape, yellow jessamine, and flowering dogwood.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Seepage moderately limits the use of this soil as sewage lagoon areas but can be overcome by proper design. Low strength is a moderate limitation for local roads and streets. Permeability moderately limits the use as sites for septic tank absorption fields, but this limitation can be overcome by increasing the size of the absorption field.

This Greenville soil is in capability class I, and the woodland ordination symbol is 8A.

GrB—Greenville sandy loam, 1 to 5 percent slopes. This soil is deep, well drained, and gently sloping. It is on broad ridges in the north- and east-central parts of the county. Individual areas range from 10 to more than 1,000 acres. Slopes are long, smooth, and convex.

Typically, the surface layer is dark reddish brown sandy loam about 5 inches thick. The next layer is dusky red sandy loam to a depth of 9 inches. The subsoil is dark red clay and sandy clay to a depth of 80 inches.

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are a few small areas of Malbis, Orangeburg, and Red Bay soils. Also included are soils similar to Greenville soil except that the lower part of the subsoil is yellowish red or the subsoil decreases in clay content with depth. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres. Malbis soils are contrasting soils, and their use and management differ from those of Greenville soil. The contrasting soils make up about 5 percent of the map unit.

This Greenville soil is used primarily for cultivated crops or as pasture or hayland. In some areas, it is used as woodland.

This soil is well suited to cultivated crops (fig. 3), pasture, or hay. Slope is a limitation. Erosion is a moderate hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Slash pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for

Figure 3.—Greenville sandy loam, 1 to 5 percent slopes, is well suited to the cultivation of soybeans.

loblolly pine is 85. The understory is mainly little bluestem, huckleberry, muscadine grape, yellow jessamine, and flowering dogwood.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Seepage and slope moderately limit the use of this soil as sewage lagoon areas but these limitations can be overcome by proper design. Low strength is a moderate limitation for local roads and streets. Permeability moderately limits the use as sites for septic tank absorption fields, but this limitation can be overcome by increasing the size of the absorption field.

This Greenville soil is in capability subclass IIe, and the woodland ordination symbol is 8A.

GuC—Greenville-Urban land complex, 0 to 7 percent slopes. This complex consists of deep, well drained, nearly level to gently sloping Greenville soil and Urban land on broad upland ridges and side slopes. Individual areas range from 5 to 100 acres. Slopes are smooth and convex. The areas of Greenville soil and Urban land are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Greenville soil makes up about 60 percent of the map unit. Typically, the surface layer is dark reddish brown sandy loam about 5 inches thick. The next layer is dusky red sandy loam to a depth of 9 inches. The subsoil is dark red clay and sandy clay to a depth of about 80 inches. Many areas have been altered either by grading or having excavated soil spread over the surface.

Important properties of Greenville soil:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Urban land makes up about 30 percent of the map unit. This land is covered by houses, buildings, streets, and parking areas. Cutting and filling, shaping and grading, excavating, or compacting altered the original soil in many areas.

Included in mapping are a few small areas of Bibb, Orangeburg, Red Bay, and Troup soils. The included soils make up about 10 percent of the map unit, but individual areas generally are 10 acres or less. Bibb and Troup soils are contrasting soils, and their use and

management differ from those of Greenville soil. The contrasting soils make up about 5 percent of the map unit.

The Greenville soil is well suited to most recreational uses. In some areas, grading is necessary in site preparation for intensive recreational development. The surface layer needs to be removed and stockpiled before grading and shaping; then respread to provide a good medium for plants.

The Greenville soil is well suited to residential and industrial uses. Grading, cutting, filling, and excavating are needed in some areas for local roads and streets. Permeability is a moderate limitation for septic tank absorption fields.

The Greenville soil is well suited to most garden and landscaping plants common to the area. No significant management concerns are present.

This complex is not assigned a capability subclass or a woodland ordination symbol.

GyC—Gritney-Malbis-Fuquay complex, 1 to 8 percent slopes. This complex consists of deep, well drained, gently sloping soils on uplands in the southwestern part of the county. Individual areas range from 100 to more than 1,500 acres. Slopes are complex and either slightly convex or slightly concave. The areas of this complex are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Gritney soil makes up about 40 percent of the map unit. Typically, the surface layer is brown sandy loam about 4 inches thick. The subsurface layer is light yellowish brown sandy loam to a depth of about 7 inches. The next layer is yellowish brown sandy loam to a depth of 11 inches. The subsoil is yellowish red and strong brown clay loam to a depth of 53 inches. Below a depth of 20 inches, it has mottles in shades of red, brown, and gray. The underlying material to a depth of 67 inches is yellowish brown sandy clay loam that has mottles in shades of gray, red, brown, and yellow.

The Malbis soil makes up about 30 percent of the map unit. Typically, the surface layer is dark grayish brown sandy loam about 6 inches thick. The subsoil extends to a depth of 72 inches. It is yellowish brown loam to a depth of about 15 inches and yellowish brown and strong brown sandy clay loam to a depth of about 50 inches. Below that, it is sandy clay loam mottled in shades of brown, red, and gray. Below a depth of 37 inches, the subsoil is 15 percent, by volume, plinthite.

The Fuquay soil makes up about 20 percent of the map unit. Typically, the surface layer is grayish brown loamy sand about 6 inches thick. The subsurface layer is yellowish brown and light yellowish brown loamy sand to a depth of about 29 inches. The subsoil extends to a depth of about 75 inches. It is yellowish brown sandy loam to a depth of 35 inches. To a depth of 41 inches, the subsoil is yellowish brown sandy clay loam that has strong brown mottles, and below that, it is sandy clay loam that is mottled in shades of brown, red, and gray. It is about 15 percent, by volume, plinthite below a depth of 41 inches.

Important properties of Gritney soil:

Permeability: slow
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Important properties of Malbis soil:

Permeability: moderate or moderately slow
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of 37 inches
High water table: 30 to 48 inches below the surface
Flooding: none

Important properties of Fuquay soil:

Permeability: slow
Available water capacity: low
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of 41 inches
High water table: 48 to 60 inches below the surface
Flooding: none

Included in this complex are areas of Orangeburg and Poarch soils. Also included are small areas of soils that are similar to Gritney soil, except they have more clay and silt in the subsoil, and the subsoil extends to a depth of more than 60 inches. The included soils make up about 10 percent of the map unit, but individual areas are generally less than 5 acres. Orangeburg and Poarch soils are contrasting soils, and their use and management differ from those of Gritney, Malbis, and Fuquay soils. The contrasting soils make up about 5 percent of the map unit.

The Gritney, Malbis, and Fuquay soils are used primarily as woodland. Some areas have been cleared and are used as hayland or pasture or for cultivated crops.

These soils are suited to cultivated crops. Slope limits the use of these soils for crops, and erosion is a moderate hazard. The low available water capacity of

Fuquay soil is an additional limitation. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion. Terraces also help to control erosion, but in some areas the undulating surface makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

These soils are well suited to hay and pasture. The low available water capacity of Fuquay soil is the main limitation; therefore, this soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. These soils have no other significant management limitations for hay or pasture.

This map unit is suited to the production of loblolly pine, slash pine, and longleaf pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 80 on the Gritney soil, 95 on the Malbis soil, and 85 on the Fuquay soil. The understory is mainly little bluestem, longleaf uniola, lespedeza, honeysuckle, dogwood, and tickclover.

The moderate equipment use limitation is a concern in managing timber because of the clayey subsoil in the Gritney soil and the thick sandy surface layer in the Fuquay soil. Droughtiness of the Fuquay soil causes moderate seedling mortality. Increasing the rate of tree planting can partly overcome this limitation. Competition by undesirable plants is moderate and reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are suited to use as sites for buildings and sanitary facilities. Wetness and permeability limit the use of these soils for septic tank absorption fields, but these limitations can be overcome by proper design. Low strength and shrinking and swelling are slight to severe limitations to the use of Gritney and Malbis soils for local roads and streets, and these limitations are costly to overcome.

The Gritney soil is in capability subclass IVe, and the woodland ordination symbol is 8C. The Malbis soil is in capability subclass IIIe, and the woodland ordination symbol is 10A. The Fuquay soil is in capability subclass IIIs, and the woodland ordination symbol is 8S.

HaC—Halso sandy loam, 2 to 8 percent slopes. This soil is moderately deep, moderately well drained, and gently sloping. It is on broad ridges and upper side slopes in the extreme northern part of the county. About 650 acres of this soil is in the county. Slopes are smooth and convex.

Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil is clay and extends to a depth of 41 inches. It is red to a depth of 31 inches, and is mottled gray and red below that. The underlying material is clayey shale that is mottled in shades of red, yellow, gray, and brown to a depth of 60 inches.

Important soil properties:

Permeability: very slow
Available water capacity: moderate
Reaction: extremely acid to strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: 48 inches
Root zone: to a depth of 40 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Luverne soils. These included soils make up about 10 percent of the map unit, but individual areas are generally less than 5 acres.

This Halso soil is used primarily as woodland. Some areas have been cleared and are used as pasture or hayland.

This soil is poorly suited to cultivated crops. Slope limits the use of this soil for crops, and erosion is a moderate hazard. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion. Terraces also help to control erosion, but in some areas the undulating surface makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

This soil is suited to pasture and hay, but erosion is a hazard.

This soil is suited to the production of loblolly pine. Slash pine and shortleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 85. The understory is mainly greenbrier, yellow jessamine, longleaf uniola, huckleberry, little bluestem, and flowering dogwood.

Moderate equipment use limitations and plant competition are concerns in managing timber on this soil. The clayey subsoil restricts the use of equipment if the subsoil is wet. Management activities should be limited to periods when the soil is dry. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is not suited to use as sites for buildings and sanitary facilities. Permeability and depth of the clayey shale severely limit the use of this soil for septic tank absorption fields, and these limitations are difficult to overcome. Low strength is a severe limitation for local roads and streets. Shrinking and swelling, the clayey subsoil, and depth to shale material are severe limitations for most other urban uses. These limitations are difficult to overcome.

This Halso soil is in capability subclass IVe, and the woodland ordination symbol is 8C.

IbA—Izagora, rarely flooded-Bethera, occasionally flooded association, 0 to 3 percent slopes. This association consists of deep, nearly level, moderately

well drained Izagora soil and poorly drained Bethera soil on major stream terraces in the northern and eastern part of the county. Slopes are smooth and slightly convex or slightly concave. The areas of these soils could have been mapped separately, but this was not practical, considering the projected land use.

The Izagora soil and similar soils make up about 55 percent of the map unit. Typically, the surface layer is very dark grayish brown loam about 3 inches thick. The subsurface layer is yellowish brown fine sandy loam to a depth of about 8 inches. The subsoil extends to a depth of 80 inches. It is yellowish brown clay loam to a depth of about 33 inches and clay that is mottled in shades of brown, red, and gray below that. Soils similar to Izagora soil have a loamy subsoil throughout.

The Bethera soil and similar soils make up about 25 percent of the map unit. Typically, the surface layer is very dark grayish brown fine sandy loam about 2 inches thick. The subsurface layer is grayish brown fine sandy loam to a depth of about 6 inches. The subsoil is gray sandy clay loam and clay loam to a depth of about 62 inches.

Important properties of Izagora soil:

Permeability: slow
Available water capacity: moderate
Reaction: extremely acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 24 to 36 inches below the surface
Flooding: rare

Important properties of Bethera soil:

Permeability: slow
Available water capacity: moderate
Reaction: extremely acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 0 to 18 inches below the surface
Flooding: occasional

Included in mapping are areas of Bigbee and Chrysler soils. Also included are areas of very poorly drained soils in depressions. The included soils make up about 20 percent of the map unit, but individual areas are generally less than 10 acres. Bigbee soils and the very poorly drained soils are contrasting soils, and their use and management differ from those of Izagora and Bethera soils. The contrasting soils make up about 10 percent of the map unit.

The Izagora and Bethera soils are used primarily as woodland. Some areas have been cleared and are used as pasture or for cultivated crops.

These soils are suited to cultivated crops. The seasonal high water table limits the use of both soils for crops, and flooding of Bethera soil is a hazard. Subsurface and surface drains help to lower the seasonal water table. Recommended spacings is 60 to 120 feet for subsurface and surface drains for Bethera soil. Wetness of Izagora soil seldom interferes with cultivation of common full-season crops. If Izagora soil is to be tilled in winter and early in spring, subsurface or surface drains should be used to lower the seasonal water table. Recommended spacings for subsurface drains is 100 to 130 feet and for surface drains is 120 to 160 feet. Only crops that are water tolerant should be planted on Bethera soil.

These soils are well suited to pasture and hay. Fertilizing and harvesting depend on soil wetness. Deferred grazing during wet periods prevents some soil compaction and helps keep the pasture and the soil in good condition.

These soils are suited to the production of loblolly pine and slash pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90 on both the Izagora and Bethera soils. The understory is mainly gallberry, longleaf uniola, American holly, huckleberry, sweetgum, and blackgum.

Because of wetness, equipment use limitations in managing timber are moderate on the Izagora soil and severe on the Bethera soil. Management activities should be conducted during periods when the soils are dry. Wetness causes severe seedling mortality on Bethera soil. To overcome seedling mortality, trees can be planted on beds or the planting rate can be increased. The windthrow hazard on Bethera soil is moderate because this soil is saturated in winter and early in spring. Heavy thinnings should be avoided on this soil. Plant competition is severe on both soils and can prevent adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are not suited to use as sites for buildings or sanitary facilities because of wetness and flooding. These problems are difficult to overcome. Low strength is a severe limitation for local roads and streets.

The Izagora soil is in capability subclass IIw. The Bethera soil is in capability subclass IVw. The woodland ordination symbol for both soils is 9W.

LuC—Luverne sandy loam, 2 to 8 percent slopes. This soil is deep, well drained, and gently sloping. It is on ridges and side slopes in the northern part of the county. Individual areas range from 100 to more than 1,000 acres. Slopes are complex and convex.

Typically, the surface layer is yellowish brown sandy loam about 6 inches thick. The subsoil extends to a depth of 28 inches. It is yellowish red clay to a depth of about 18 inches and yellowish red clay loam below that.

The underlying material is red and yellowish brown stratified loamy material to a depth of about 40 inches and soft gray shale interbedded with red and yellowish brown sandy loam material to a depth of about 65 inches.

Important soil properties:

Permeability: moderately slow
Available water capacity: moderate
Reaction: extremely acid to strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Conecuh and Orangeburg soils. The included soils make up about 10 percent of the map unit, but individual areas are generally less than 5 acres. Orangeburg soils are contrasting soils, and their use and management differ from those of Luverne soil. The contrasting soils make up about 5 percent of the map unit.

This Luverne soil is used primarily as woodland. Some areas have been cleared and are used for cultivated crops or as pasture or hayland.

This soil is poorly suited to cultivated crops but can produce moderate yields. Slope limits the use of this soil for crops, and erosion is a moderate hazard. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion. Terraces also help to control erosion, but in some areas the undulating surface makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

This soil is suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Shortleaf pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly greenbrier, poison oak, longleaf uniola, huckleberry, little bluestem, waxmyrtle, muscadine grape, and flowering dogwood.

Modeate equipment use limitations and plant competition are concerns in managing timber on this soil. The clayey subsoil restricts the use of equipment if the soil is wet. Management activities should be limited to periods when the soil is dry. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is poorly suited to use as sites for buildings and sanitary facilities. Moderately slow permeability severely limits the use of this soil for septic tank absorption fields and is difficult to overcome. Low strength is a severe limitation for local roads and streets. Shrinking and swelling is a moderate limitation for most other urban uses, but this limitation can sometimes be overcome by proper design.

This Luverne soil is in capability subclass IVe, and the woodland ordination symbol is 9C.

LuD—Luverne sandy loam, 8 to 15 percent slopes. This soil is deep, well drained, and sloping. It is on narrow ridges and side slopes in the northern part of the county. Individual areas range from 100 acres to more than 1,000 acres. Slopes are complex and convex.

Typically, the surface layer is yellowish brown sandy loam about 6 inches thick. The subsoil extends to a depth of 28 inches. It is yellowish red clay to a depth of about 18 inches and yellowish red clay loam below that. The underlying material is red and yellowish brown stratified loamy material to a depth of about 40 inches and soft gray shale interbedded with red and yellowish brown sandy loam material to a depth of about 65 inches.

Important soil properties:

Permeability: moderately slow
Available water capacity: moderate
Reaction: extremely acid to strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Conecuh, Izagora, and Bethera soils. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 10 acres. Bethera and Izagora soils are contrasting soils, and their use and management differ from those of Luverne soil. The contrasting soils are generally indicated on the soil map with an intermittent or perennial stream symbol and make up about 5 percent of the map unit.

This Luverne soil is used primarily as woodland. Some areas have been cleared and are used for cultivated crops or as pasture or hayland.

This soil is not suited to cultivated crops. Slope limits the use of this soil for crops, and erosion is a severe hazard. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion. Terraces also help to control erosion, but in most areas the undulating surface makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

This soil is suited to pasture and hay. Slope is a significant management concern, and erosion is a hazard.

This soil is suited to the production of loblolly pine. Shortleaf pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly greenbrier,

poison oak, longleaf uniola, huckleberry, little bluestem, waxmyrtle, muscadine grape, and flowering dogwood.

Moderate equipment use limitations and plant competition are concerns in managing timber on this soil. The clayey subsoil restricts the use of equipment if the soil is wet. Management activities should be limited to periods when the soil is dry. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is poorly suited to use as sites for buildings and sanitary facilities. Moderately slow permeability is a severe limitation for the use of this soil for septic tank absorption fields, and slope and shrinking and swelling are moderate or severe limitations for most other urban uses. These limitations are difficult to overcome. Low strength is a severe limitation for local roads and streets.

This Luverne soil is in capability subclass VIe, and the woodland ordination symbol is 9C.

MaB—Malbis sandy loam, 1 to 6 percent slopes. This soil is deep, well drained, and nearly level to gently sloping. It is on broad ridges and toe slopes throughout the county. Individual areas range from 5 to more than 100 acres. Slopes are long, smooth, and slightly convex or slightly concave.

Typically, the surface layer is dark grayish brown sandy loam about 6 inches thick. The subsoil extends to a depth of 72 inches. It is yellowish brown loam to a depth of about 15 inches and yellowish brown sandy clay loam to a depth of about 37 inches. Below that, the subsoil is sandy clay loam that is mottled in shades of brown and red and has 15 percent, by volume, plinthite.

Important soil properties:

Permeability: moderate or moderately slow
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of 37 inches
High water table: 30 to 48 inches below the surface
Flooding: none

Included with this soil in mapping are a few small areas of Fuquay, Orangeburg, and Poarch soils. Also included are soils that are similar to Malbis soil except they have either a clayey subsoil or they are moderately well drained. The included soils make up about 20 percent of the map unit, but individual areas are generally less than 5 acres. Orangeburg soils, the soils that have a clayey subsoil, and the moderately well drained soils are contrasting soils, and their use and management differ from those of the Malbis soil. These contrasting soils make up about 10 percent of the map unit.

This Malbis soil is used primarily for cultivated crops or as pasture or hayland. In some areas, it is used as woodland.

This soil is well suited to cultivated crops. Slope limits the use of this soil for crops, and erosion is a moderate hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Slash pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 95. The understory is mainly greenbrier, little bluestem, gallberry, yellow jessamine, sumac, huckleberry, and flowering dogwood.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Wetness and permeability severely limit the use of this soil for septic tank absorption fields. These limitations are difficult to overcome. Wetness is a moderate limitation for most other urban uses.

This Malbis soil is in capability subclass IIe, and the woodland ordination symbol is 10A.

OcC—Oktibbeha-Cadeville complex, 1 to 8 percent slopes. This complex consists of deep, moderately well drained, gently sloping to sloping soils on uplands in the central part of the county. Individual areas range from 100 to more than 500 acres. Slopes are long, smooth, and slightly convex and slightly concave. The areas of these soils are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Oktibbeha soil and similar soils make up about 45 percent of the map unit. Typically, the surface layer is very dark grayish brown clay loam about 3 inches thick. The subsoil extends to a depth of 36 inches. It is red clay to a depth of about 16 inches and clay that is mottled in shades of red and gray to a depth of about 36 inches. The underlying material is yellowish brown clay to a depth of 60 inches.

The Cadeville soil and similar soils make up about 40 percent of the map unit. Typically, the surface layer is dark brown fine sandy loam about 4 inches thick. The subsoil is clay and extends to a depth of 40 inches. It is yellowish red to a depth of 12 inches; mottled in shades of red, brown, and gray to a depth of about 20 inches; and light brownish gray with red and yellowish brown mottles below that. The underlying material to a depth of

72 inches is clay that is mottled in shades of red, gray, yellow, and brown.

Important properties of Oktibbeha soil:

Permeability: very slow
Available water capacity: moderate
Reaction: very strongly acid to moderately alkaline
Organic matter content: moderate
Natural fertility: moderate
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Important properties of Cadeville soil:

Permeability: very slow
Available water capacity: moderate
Reaction: extremely acid to strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included in mapping are areas of Malbis, Orangeburg, Saffell, and Troup soils. These soils are contrasting soils, and their use and management differ from those of Oktibbeha and Cadeville soils. The contrasting soils make up about 15 percent of the map unit. Also included are areas of soils that are similar to Oktibbeha and Cadeville soils except they are deeper. The included soils make up about 20 percent of the map unit, but individual areas are generally less than 15 acres.

The Oktibbeha and Cadeville soils are used primarily as woodland and pasture. In some areas, these soils are used as hayland or for cultivated crops.

These soils are poorly suited to cultivated crops. Slope limits the use of these soils for crops, and erosion is a severe hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. Crop residue returned to the soil helps to maintain tilth. These soils can be cultivated within a narrow range of moisture content.

These soils are suited to hay and pasture. Oktibbeha soil cracks if it is dry. The soils in this complex have low strength if they are wet. Deferred grazing helps keep the soil and sod in good condition.

These soils are suited to the production of loblolly pine. Shortleaf pine is also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90 on Oktibbeha soil and 85 on Cadeville soil. The understory is mainly greenbrier, yellow jessamine, waxmyrtle, honeysuckle, dogwood, and huckleberry.

Equipment use limitations are moderate on Oktibbeha soil and severe on Cadeville soil. Seedling mortality is moderate because of the clayey subsoil in both soils. In managing these soils for timber production, activities should be conducted when the soil is dry. Increasing the tree planting rate can overcome seedling mortality. Plant competition is moderate on Cadeville soil and severe on Oktibbeha soil. It reduces adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are not suited to use as sites for buildings and sanitary facilities. Permeability and shrinking and swelling are severe limitations for most urban uses and are difficult to overcome. Low strength is a severe limitation for local roads and streets.

The Oktibbeha and Cadeville soils are in capability subclass IVe. The woodland ordination symbol is 9C for Oktibbeha soil and 8C for Cadeville soil.

OsE—Oktibbeha-Saffell complex, 5 to 25 percent slopes. This complex consists of sloping to moderately steep, moderately well drained, clayey Oktibbeha soil and deep, well drained, gravelly Saffell soil on uplands in the central part of the county. Individual areas range from 100 to 500 acres or more. Slopes are complex and either convex or concave. The areas of these soils are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Oktibbeha soil and similar soils make up about 65 percent of the map unit. These soils are on mid slopes and toe slopes. Slopes are 5 to 15 percent. Typically, the surface layer is very dark grayish brown clay loam about 3 inches thick. The subsoil extends to a depth of 36 inches. It is red clay to a depth of about 16 inches and clay that is mottled in shades of red, gray, and brown below that. The underlying material is yellowish brown clay to a depth of 60 inches.

The Saffell soil and similar soils make up about 20 percent of the map unit. These soils are on narrow ridgetops and upper side slopes. Slopes are 8 to 25 percent. These soils are on a higher elevation of the landscape than the Oktibbeha soil. Typically, the surface layer is dark grayish brown gravelly loamy sand about 5 inches thick. The subsoil is yellowish red and red very gravelly sandy clay loam to a depth of about 28 inches. The next layer is red very gravelly loamy sand to a depth of 43 inches. The underlying material is yellowish red extremely gravelly loamy sand to a depth of 60 inches.

Important properties of Oktibbeha soil:

Permeability: very slow
Available water capacity: moderate
Reaction: very strongly acid to moderately alkaline
Organic matter content: moderate
Natural fertility: moderate
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Important properties of Saffell soil:

Permeability: moderate
Available water capacity: low
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included in mapping are areas of Orangeburg, Malbis, and Troup soils. Also included are areas that are similar to Oktibbeha soil except they are either better drained or have a less clayey subsoil. These included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres. Orangeburg and Malbis soils are contrasting soils, and their use and management differ from those of Oktibbeha and Saffell soils. The contrasting soils make up about 10 percent of the map unit.

The Oktibbeha and Saffell soils are used primarily as woodland. Some areas have been cleared and are being used as hayland or pasture.

These soils are not suited to cultivated crops. Slope limits the use of these soils for crops, and erosion is a severe hazard. The low available water capacity of Saffell soil is an additional limitation. Crop residue returned to the soil helps to maintain tilth. Oktibbeha soil can be cultivated within a narrow range of moisture content.

These soils are poorly suited to hay and pasture. Steepness of slope is a limitation, and erosion is a severe hazard. The low available water capacity of Saffell soil is an additional limitation.

These soils are suited to the production of loblolly pine. Shortleaf pine is also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90 on the Oktibbeha soil and 70 on the Saffell soil. The understory is mainly greenbrier, yellow jessamine, little bluestem, honeysuckle, dogwood, and huckleberry.

Erosion is a moderate hazard on Saffell soil. Management activities should include conservation practices to control erosion. Site preparation methods that minimize soil disturbance are needed. The clay subsoil in Oktibbeha soil and gravelly surface layer in Saffell soil cause a moderate equipment use limitation. Management activities should be conducted during periods when the soils are dry. The gravelly surface layer and clayey subsoil cause moderate seedling mortality on the Oktibbeha and Saffell soils. Increasing the rate of tree planting can overcome this limitation. Plant competition is severe on Oktibbeha soil and reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are not suited to use as sites for buildings or sanitary facilities. Slope, permeability, and shrinking and swelling moderately or severely limit the use of these soils for most urban uses. These limitations are difficult to overcome. Low strength is a severe limitation to use of the Oktibbeha soil for local roads and streets.

Oktibbeha and Saffell soils are in capability subclass VIe. The woodland ordination symbol is 9C for Oktibbeha soil and 6F for Saffell soil.

OrB—Orangeburg sandy loam, 1 to 6 percent slopes. This soil is deep, well drained, and gently sloping. It is on broad ridges and upper side slopes throughout the county. Individual areas range from 5 acres to more than 500 acres. Slopes are long, smooth, and convex.

Typically, the surface layer is dark grayish brown sandy loam about 6 inches thick. The next layer is dark yellowish brown sandy loam to a depth of 12 inches. The subsoil extends to a depth of 72 inches. It is yellowish red sandy loam to a depth of 20 inches and red sandy clay loam below that.

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Malbis, Greenville, and Troup soils. Also included are soils that are similar to Orangeburg soil except they have either a sandy loam or a clay loam subsoil. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres. Troup and Malbis soils are contrasting soils, and their use and management differ from those of Orangeburg soil. The contrasting soils make up about 5 percent of the map unit.

This Orangeburg soil is used primarily for cultivated crops (fig. 4) or as pasture or hayland. In some areas, it is used as woodland.

This soil is well suited to cultivated crops; however, slope is a limitation and erosion is a moderate hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Slash pine and longleaf pine are also grown. On the

Figure 4.—Peanuts is a suitable crop in Orangeburg sandy loam, 1 to 6 percent slopes.

basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly yellow jessamine, little bluestem, huckleberry, sumac, greenbrier, and flowering dogwood.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is well suited to use as sites for buildings and sanitary facilities. Seepage and slope moderately limit the use of this soil for sewage lagoon areas, but these limitations can be overcome by proper design. No other significant limitations are present.

This Orangeburg soil is in capability subclass IIe, and the woodland ordination symbol is 9A.

OuC—Orangeburg-Urban land complex, 0 to 7 percent slopes. This complex consists of deep, well drained, nearly level to gently sloping Orangeburg soil and areas of Urban land on broad upland ridges and side slopes. Individual areas range from 20 to 200 acres. Slopes are smooth and convex. The areas of Orangeburg soil and Urban land are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Orangeburg soil and similar soils make up about 60 percent of the map unit. Typically, the surface layer is dark grayish brown sandy loam about 6 inches thick. The next layer is dark yellowish brown sandy loam to a depth of 12 inches. The subsoil extends to a depth of 72 inches. It is yellowish red sandy loam to a depth of 20 inches and red sandy clay loam below that. Many areas have been altered by grading or by having excavated subsoil material spread over the surface.

Important properties of Orangeburg soil:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Urban land makes up about 30 percent of the map unit. This land is covered by houses, buildings, streets, and parking areas. Cutting and filling, shaping and grading, excavating, or compacting altered the original soil in many areas.

Included in mapping are a few small areas of Greenville, Malbis, and Troup soils. The included soils make up about 10 percent of the map unit, but individual areas generally are 5 acres or less. Troup and Malbis soils are contrasting soils, and their use and management differ from those of Orangeburg soil. These contrasting soils make up about 5 percent of the map unit.

The Orangeburg soil is well suited to most recreational uses. In some areas, grading is necessary in site preparation for intensive recreational development. The surface layer needs to be removed and stockpiled before grading; then respread to provide a good medium for plants.

The Orangeburg soil is well suited to residential and industrial uses. Grading, cutting, filling, and excavating are needed in some areas for local roads and streets. No significant limitations for septic tank absorption fields, dwellings, and local roads and streets are present. This soil is suited to use as sites for small commercial buildings. Small amounts of cutting are necessary. The Orangeburg soil is well suited to most garden and landscaping plants common to the area. No significant management concerns are present.

This complex is not assigned a capability subclass or a woodland ordination symbol.

PITS—Pits. This map unit consists of open excavations from which the soil and part of the underlying material have been removed. Areas of spoil material are also in this map unit. Mapped areas are the result of excavation activities to remove soil material or gravel, or both. Some areas are partly filled with water during winter and spring. Individual areas are 3 to 10 acres. Those areas that are smaller than 3 acres are shown on the soil map with a special symbol.

Important properties of Pits:

Permeability: variable
Available water capacity: very low
Reaction: variable
Organic matter content: very low
Natural fertility: very low
Depth to bedrock: more than 60 inches
Root zone: variable
High water table: more than 6 feet below the surface
Flooding: none

In most areas the excavations are 10 to 75 feet deep and are partly to completely surrounded by vertical walls of exposed geologic strata. These areas are bare of vegetation, and the hazard of erosion is severe. The very low available water capacity and very low natural fertility make revegetation difficult.

Included in mapping are areas of soil material. These included areas are covered by sparse vegetation and make up about 20 percent of the map unit.

This map unit is not assigned to a capability subclass or a woodland ordination symbol.

PoB—Poarch sandy loam, 0 to 5 percent slopes. This soil is deep, well drained, and nearly level to gently sloping. It is on broad uplands and toe slopes in the south-central part of the county. Individual areas range from 5 to more than 150 acres. Slopes are smooth and convex.

Typically, the surface layer is very dark grayish brown sandy loam about 3 inches thick. The subsurface layer is brown sandy loam to a depth of 8 inches. The subsoil is sandy loam that extends to a depth of 72 inches. It is light yellowish brown to a depth of 18 inches, yellowish brown to a depth of 35 inches, yellowish brown with gray and brown mottles to a depth of 62 inches, and below that it is mottled in shades of brown and gray. Plinthite makes up about 8 to 15 percent of the volume between depths of 44 and 72 inches.

Important soil properties:

Permeability: moderate or moderately slow
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of 44 inches
High water table: 30 to 60 inches below the surface
Flooding: none

Included with this soil in mapping are a few small areas of Fuquay, Malbis, and Troup soils. Also included are soils that are similar to Poarch soil except they have either a loamy sand surface layer or are somewhat poorly drained. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres. Fuquay and Troup soils are contrasting soils, and their use and management differ from those of Poarch soil. The contrasting soils make up about 5 percent of the map unit.

This Poarch soil is used primarily for cultivated crops or as pasture or hayland. In some areas, it is used as woodland.

This soil is well suited to cultivated crops; however, slope is a limitation and erosion is a moderate hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. The high water table can delay spring planting. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Slash pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly greenbrier,

little bluestem, gallberry, yellow jessamine, sumac, huckleberry, and flowering dogwood.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Seepage and slope moderately limit the use of this soil for sewage lagoon areas, but these limitations can be overcome by proper design. Wetness and permeability severely limit the use of this soil for septic tank absorption fields. These limitations are difficult to overcome. Wetness moderately limits most other urban uses.

This Poarch soil is in capability subclass IIe, and the woodland ordination symbol is 9A.

RbB—Red Bay sandy loam, 1 to 5 percent slopes. This soil is deep, well drained, and nearly level to gently sloping. It is on broad uplands in the central part of the county. Individual areas range from 5 to more than 100 acres. Slopes are long, smooth, and slightly convex or slightly concave.

Typically, the surface layer is dark reddish brown sandy loam about 5 inches thick. The subsoil extends to a depth of 80 inches. It is mixed dark red and dark reddish brown sandy clay loam to a depth of 9 inches, dark red sandy clay loam to a depth of 66 inches, and yellowish red sandy loam below that.

Important soil properties:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are a few small areas of Malbis and Greenville soils. Also included are soils that are similar to Red Bay soil except the lower part of the subsoil is yellowish red or the subsoil decreases in clay content with depth. The included soils make up about 15 percent of the map unit, but individual areas are generally less than 5 acres. Malbis soils are contrasting soils, and their use and management differ from those of Red Bay soil. These contrasting soils make up about 5 percent of the map unit.

This Red Bay soil is used primarily for cultivated crops or as pasture or hayland. In some areas, it is used as woodland.

This soil is well suited to cultivated crops (fig. 5); however, slope is a limitation, and erosion is a moderate hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion. Crop residue returned to the soil helps to maintain tilth.

This soil is well suited to pasture and hay. No significant management concerns are present.

This soil is suited to the production of loblolly pine. Slash pine and longleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 90. The understory is mainly greenbrier, little bluestem, longleaf uniola, yellow jessamine, sumac, and flowering dogwood.

Moderate plant competition is a concern in managing timber on this soil. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is well suited to use as sites for buildings and sanitary facilities. Seepage and slope moderately limit the use of this soil for sewage lagoon areas but these limitations can be overcome by proper design. No other significant limitations are present.

This Red Bay soil is in capability subclass IIe, and the woodland ordination symbol is 9A.

TaC—Troup loamy sand, 2 to 8 percent slopes. This soil is deep, excessively drained, and sloping. It is on broad ridges and side slopes throughout the county. Individual areas range from 10 to more than 1,000 acres. Slopes are complex and convex.

Typically, the surface layer is dark brown loamy sand about 7 inches thick. The subsurface layer is loamy sand. It extends to a depth of 62 inches. It is yellowish brown to a depth of about 28 inches, strong brown to a depth of 54 inches, and yellowish red below that. The subsoil to a depth of more than 92 inches is red sandy loam and sandy clay loam.

Important soil properties:

Permeability: rapid in the surface and subsurface layers and moderate in the subsoil
Available water capacity: low
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with this soil in mapping are small areas of Greenville, Malbis, and Orangeburg soils. Also included are soils that have a red or brown subsoil within 40 inches of the surface and soils that have loamy sand more than 80 inches thick. These included soils make up about 15 percent of the map unit, but individual areas are generally less than 10 acres. Greenville, Malbis, and Orangeburg soils are contrasting soils, and their use and

Figure 5.—This crop of peanuts is ready for harvest in an area of Red Bay sandy loam, 1 to 5 percent slopes.

management differ from those of Troup soils. The contrasting soils make up about 10 percent of the map unit.

This Troup soil is primarily used as woodland. Some areas have been cleared and are used for cultivated crops, hay, or pasture.

This Troup soil is poorly suited to cultivated crops. The low available water capacity of the surface and subsurface layers is a limitation. The hazard of erosion is moderate, and this soil is subject to gully erosion in areas that have a concentration of water. If the soil is tilled, plowpans form and restrict root growth of some annual crops. Crop residue returned to the soil helps to maintain tilth. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion.

This soil is suited to pasture and hay; however, the low available water capacity of the surface and subsurface layers is a limitation. This soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. Deferred grazing during dry periods helps keep the soil in good condition.

This soil is suited to the production of loblolly pine and longleaf pine. Slash pine and southern red oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 80. The understory is mainly greenbrier, little bluestem, huckleberry, blackjack oak, hickory, and flowering dogwood.

Moderate seedling mortality and plant competition are concerns in managing timber on this soil. The thick, sandy surface layer can restrict the use of wheeled equipment, especially if the soil is very dry. Harvesting should be limited to periods when the soil is moist. Droughtiness causes moderate seedling mortality. Increasing the rate of tree planting can partly overcome this limitation. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is suited to use as sites for buildings and sanitary facilities. Seepage severely limits the use of this soil for sewage lagoon areas and is difficult to overcome. No other significant limitations for urban use are present.

This Troup soil is in capability subclass IVs, and the woodland ordination symbol is 8S.

TgD—Troup-Gritney-Saffell complex, 8 to 15 percent slopes. This complex consists of deep, well

drained, sloping to strongly sloping soils on side slopes in the southwestern part of the county. Individual areas range from 100 to more than 1,000 acres. Slopes are complex and either slightly convex or concave. The individual areas of these soils are too intricately mixed or too small to map separately at the scale used for the maps in the back of this publication.

The Troup soil makes up about 45 percent of the map unit and is on middle to upper slopes. Typically, the surface layer is dark brown loamy sand about 7 inches thick. The subsurface layer is loamy sand. It extends to a depth of 62 inches. It is yellowish brown to a depth of about 28 inches, strong brown to a depth of about 54 inches, and yellowish red below that. The subsoil to a depth of more than 92 inches is red sandy loam and sandy clay loam.

The Gritney soil makes up about 30 percent of the map unit and is on middle to lower slopes. Typically, the surface layer is brown sandy loam about 4 inches thick. The subsurface layer is yellowish brown sandy loam to a depth of about 7 inches. The subsoil extends to a depth of 72 inches. To a depth of 11 inches, it is yellowish brown sandy loam, and to a depth of 20 inches, it is yellowish red clay. Below that, the subsoil is yellowish brown and strong brown clay loam that has mottles in shades of yellow and gray.

The Saffell soil makes up about 20 percent of the map unit and is on middle to upper slopes and narrow ridgetops. Typically, the surface layer is dark grayish brown gravelly loamy fine sand about 5 inches thick. The subsoil is yellowish red and red very gravelly sandy clay loam to a depth of about 28 inches. The next layer is red very gravelly loamy sand to a depth of 43 inches. The underlying material is yellowish red very gravelly loamy sand to a depth of 60 inches.

Important properties of Troup soil:

Permeability: rapid in the surface layer and moderate in the subsoil
Available water capacity: low
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Important properties of Gritney soil:

Permeability: slow
Available water capacity: moderate
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Important properties of Saffell soil:

Permeability: moderate
Available water capacity: low
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included in this complex are areas of Bibb, Orangeburg, and Poarch soils. Also included are areas of soils that are similar to Gritney soil except they have a clayey subsoil that extends to a depth of more than 60 inches. These included soils make up about 10 percent of the map unit, but individual areas are generally less than 10 acres. Bibb, Orangeburg, and Poarch soils are contrasting soils, and their use and management differ from those of the Troup, Gritney, and Saffell soils. The contrasting soils make up about 5 percent of the map unit. Bibb soils are generally shown on the soil map with a perennial or an intermittent stream symbol.

The Troup, Gritney, and Saffell soils are used primarily as woodland.

These soils are poorly suited to cultivated crops. Slope limits the use of these soils for crops, and erosion is a severe hazard. The low available water capacity of Troup soil is an additional limitation. Conservation tillage, contour farming, and cover crops reduce runoff and help to control erosion. Terraces also help to control erosion, but in most areas the undulating surface makes construction difficult. Crop residue returned to the soil helps to maintain tilth.

These soils are suited to hay and pasture. The low available water capacity of Troup and Saffell soils is a limitation; therefore, these soils are best suited to deep-rooted plants, such as bahiagrass and bermudagrass.

These soils are suited to the production of loblolly pine and longleaf pine. Slash pine and shortleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 80 on Troup and Gritney soils and 70 on Saffell soil. The understory is mainly little bluestem, longleaf uniola, lespedeza, honeysuckle, dogwood, and tickclover.

Moderate equipment use limitations are a concern in managing timber because of the thick sandy surface layer in Troup soil, the clayey subsoil in Gritney soil, and the gravelly surface layer in Saffell soil. Droughtiness of the Troup and Saffell soils causes moderate seedling mortality. Increasing the rate of tree planting can partly overcome this limitation. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation on Troup and Gritney soils. Site

preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are poorly suited to use as sites for buildings and sanitary facilities. Slope and permeability limit the use of these soils for septic tank absorption fields, but these limitations can be overcome by proper design. Seepage is a moderate or severe limitation for other types of sanitary facilities, and it is difficult to overcome. Low strength and shrinking and swelling severely limit the use of Gritney soil for local roads and streets. These limitations are also difficult to overcome.

The Troup soil is in capability subclass VIs, and the woodland ordination symbol is 8S. The Gritney and Saffell soils are in capability subclass VIe. The woodland ordination symbol is 8C for Gritney soil and 6F for Saffell soil.

ToE—Troup-Orangeburg association, 8 to 25 percent slopes. This association consists of deep, well drained soils in a regular and repeating pattern. The landscape is a series of convex side slopes that have narrow drainageways and narrow to broad ridgetops. Troup soil is on middle to lower side slopes. Orangeburg soil is on upper side slopes and ridges. Individual areas range from 50 to more than 1,000 acres.

The Troup soil makes up about 55 percent of the map unit. Typically, the surface layer is dark brown loamy sand about 7 inches thick. The subsurface layer is loamy sand. It extends to a depth of 62 inches. It is yellowish brown to a depth of about 28 inches, strong brown to a depth of 54 inches, and yellowish red below that. The subsoil to a depth of more than 92 inches is red sandy loam and sandy clay loam.

The Orangeburg soil makes up about 35 percent of the map unit. Typically, the surface layer is dark grayish brown sandy loam about 6 inches thick. The subsoil extends to a depth of about 72 inches. It is yellowish brown sandy loam to a depth of 12 inches and yellowish red and red sandy clay loam below that.

Important properties of Troup soil:

Permeability: rapid in the surface layer and moderate in the subsoil
Available water capacity: low
Reaction: very strongly acid or strongly acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Important properties of Orangeburg soil:

Permeability: moderate
Available water capacity: moderate
Reaction: very strongly acid to medium acid
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: none within a depth of 72 inches
Flooding: none

Included with these soils in mapping are a few areas of Greenville, Arundel, Bibb, and Bethera soils. Also included are soils that are similar to Orangeburg soil except they have a sandy loam subsoil and sandy surface and subsurface layers that are 20 to 40 inches thick. Arundel soils and soils that are similar to Troup soil are on middle to lower side slopes. Bibb and Bethera soils are in drainageways and are generally shown on the soil map with either a perennial or an intermittent stream symbol. Arundel, Bethera, and Bibb soils are contrasting soils, and their use and management differ from those of the Troup and Orangeburg soils. The included soils make up about 10 percent of the map unit.

These Troup and Orangeburg soils are used primarily as woodland. In a few small areas, they are used for cultivated crops or as pasture.

Troup soil is poorly suited to cultivated crops. The moderately steep slopes and the low available water capacity limit the use of this soil for crops, and erosion is a hazard. Troup soil is subject to gully erosion in areas that have a concentration of water. Most active gullies in the county are located in this map unit. Orangeburg soil is suited to cultivated crops, but suitability is limited by slope, and erosion is a hazard. Conservation tillage, terraces, contour farming, and cover crops reduce runoff and help to control erosion.

Troup and Orangeburg soils are suited to pasture and hay; however, erosion is a hazard on slopes of more than 15 percent. The low available water capacity of Troup soil is a limitation; therefore, this soil is best suited to deep-rooted plants, such as bahiagrass and bermudagrass. Deferred grazing during dry periods helps keep the soil in good condition.

These soils are suited to the production of loblolly pine and longleaf pine. Slash pine and shortleaf pine are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 80 on Troup soil and 90 on Orangeburg soil. The understory is mainly little bluestem, longleaf uniola, lespedeza, honeysuckle, blackberry, dogwood, and tickclover.

Moderate seedling mortality and equipment use limitations are concerns in managing timber on Troup soil because of the thick sandy surface layer and steepness of slope. Erosion is a hazard. Management activities should include conservation practices to control soil erosion. Site preparation methods that minimize soil disturbance are needed. The thick sandy surface layer restricts the use of wheeled equipment, especially if the soil is very dry. Harvesting should be limited to periods when the soil is moist. Tracked equipment should be

used on steep slopes. Droughtiness causes seedling mortality. Increasing the rate of tree planting can partly overcome this limitation. Moderate plant competition is a concern in managing timber on Troup and Orangeburg soils. Competition by undesirable plants reduces plant growth and adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

These soils generally are suited to use as sites for buildings and sanitary facilities. Seepage severely limits the use of Troup soil for sewage lagoon areas and sanitary landfills. Slope is a moderate or severe limitation for most urban uses, but this limitation can be overcome by proper design.

The Troup soil is in capability subclass VIIs, and the woodland ordination symbol is 8S. The Orangeburg soil is in capability subclass VIe, and the woodland ordination symbol is 9A.

YoA—Yonges loam, 0 to 1 percent slopes, frequently flooded. This soil is deep, nearly level, and poorly drained. It is on low terraces of major streams in the county. Individual areas range from 5 to 1,000 acres.

Typically, the surface layer is gray loam about 3 inches thick. The subsoil, to a depth of about 42 inches, is light brownish gray sandy clay loam and grayish brown clay loam that has brown and yellow mottles. To a depth of 57 inches, the subsoil is light olive gray sandy clay loam that has red and yellow mottles. The next layer, to a depth of 77 inches, is sandy loam that is mottled in shades of gray, brown, and yellow. Below that, to a depth of 90 inches, is dark gray sandy loam.

Important soil properties:

Permeability: moderately slow
Available water capacity: moderate
Reaction: strongly acid to neutral in the upper part of the soil and slightly acid to moderately alkaline in the lower part
Organic matter content: low
Natural fertility: low
Depth to bedrock: more than 60 inches
Root zone: to a depth of more than 60 inches
High water table: 0 to 12 inches below the surface
Flooding: frequent

Included with this soil in mapping are small areas of Bibb, Bigbee, and Bonneau soils. Also included are soils that are similar to Yonges soil except they are better drained and small areas of soil that have a clayey subsoil. These included soils make up about 25 percent of the map unit, but individual areas are generally less than 5 acres. Bigbee and Bonneau soils are contrasting soils, and their use and management differ from those of Yonges soil. These contrasting soils make up about 10 percent of the map unit.

This Yonges soil is used primarily as woodland.

This soil is poorly suited to cultivated crops because of wetness and frequency of flooding. Only crops that are water tolerant should be planted on this soil.

This soil is poorly suited to pasture and hay. The seasonal high water table is the main limitation, and flooding is a hazard. Subsurface and surface drains help to lower the seasonal high water table. Recommended spacing is 60 to 120 feet for subsurface and surface drains. Deferred grazing during wet periods prevents some soil compaction and helps keep the pasture and the soil in good condition.

This soil is suited to the production of loblolly pine. Sweetgum and water oak are also grown. On the basis of a 50-year site curve, the mean site index for loblolly pine is 100. The understory is mainly greenbrier, sweetbay, palmetto, gallberry, and longleaf uniola.

Severe equipment use limitations, seedling mortality, and plant competition are concerns in managing timber on this soil. Windthrow hazard is moderate. Management activities should be limited to periods when the soil is dry. To overcome seedling mortality, trees can either be planted on beds or the planting rate can be increased. Heavy thinnings should be avoided to reduce windthrow. Competition by undesirable plants can prevent adequate natural or artificial reforestation. Site preparation to eliminate unwanted vegetation can control plant competition.

This soil generally is poorly suited to use as sites for buildings and sanitary facilities because of flooding and wetness. These problems are difficult to overcome.

This Yonges soil is in capability subclass VIw, and the woodland ordination symbol is 9W.

Prime Farmland

In this section, prime farmland is defined and discussed, and the prime farmland soils in Conecuh County are listed.

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, state, and federal levels, as well as individuals, must encourage and facilitate the wise use of our nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to producing food, feed, forage, fiber, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. The soils need only to be treated and managed using acceptable farming methods. The moisture supply, of course, must be adequate, and the growing season has to be sufficiently long. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland soils may presently be in use as cropland, pasture, or woodland, or they may be in other uses. They either are used for producing food or fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water control structures. Public land is land not available for farming in national forests, national parks, military reservations, and state parks.

Prime farmland soils usually get an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not subject to frequent flooding during the growing season. The slope ranges mainly from 0 to 6 percent.

The following map units, or soils, make up prime farmland in Conecuh County. Only the soils considered prime farmland are listed. Urban or built-up areas of the soils are not considered prime farmland. Soils that have limitations, such as a high water table or flooding, may qualify as prime farmland if these limitations are overcome by such measures as drainage or flood control. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 5. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use. The local Soil Conservation Service can provide more detailed information on the criteria for prime farmland.

In Conecuh County, 170,395 acres, or 31 percent of the county, meets the requirements for prime farmland. These areas are scattered throughout the county.

The trend in land use in the county has been the conversion of some prime farmland to industrial and urban uses. This loss of prime farmland puts pressure on marginal lands, which generally are more erodible, droughty, and difficult to cultivate, and generally less productive than prime farmland.

CaA Cahaba sandy loam, 0 to 3 percent slopes, rarely flooded
CwC Cowarts sandy loam, 2 to 8 percent slopes
GrA Greenville sandy loam, 0 to 1 percent slopes
GrB Greenville sandy loam, 1 to 5 percent slopes
MaB Malbis sandy loam, 1 to 6 percent slopes
OrB Orangeburg sandy loam, 1 to 6 percent slopes
PoB Poarch sandy loam, 0 to 5 percent slopes
RbB Red Bay sandy loam, 1 to 5 percent slopes

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavior characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern that is in harmony with nature.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Kenneth M. Rogers, conservation agronomist, Soil Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

In 1978, Conecuh County had approximately 60,000 acres of cropland and 51,000 acres of pastureland. Approximately 25,500 acres of soybeans, 18,000 acres of corn, 4,500 acres of wheat, and 2,600 acres of peanuts were planted in 1981. Also, 11,700 acres of hay was harvested in 1981 *(9)*. A small acreage in the northeastern section of the county produces tobacco. The acreage in cultivated crops and pasture has been decreasing slightly for several years. In most of Conecuh County, the trend is toward reforestation.

The potential is good for increased production of food and fiber in Conecuh County. About 146,000 acres of potential cropland are being used as pasture and woodland. If the most recent technology is applied, yields can increase on land currently under cultivation. This soil survey will help land users to make sound land management decisions and to facilitate the application of crop production technology.

Crops that are suited to the soils and climate of Conecuh County include many that are not commonly grown. Soybeans, corn, peanuts, and wheat are the main crops. Grain sorghum, vegetables, and similar crops can be grown under favorable economic conditions.

Specialty crops include tobacco, melons, sod, strawberries, peas, magnolia trees (fig. 6), and sweet potatoes. Greenville, Malbis, and Orangeburg soils are well suited to specialty crops, and a larger acreage of these crops could be grown if economic conditions were feasible. The only orchard crop grown commercially in the county is pecans. Blueberries are a suitable crop for the soils in this survey area, but they are grown only on a small acreage. Wheat, rye, and oats are the only close-growing crops that are planted to produce grain; however, barley can also be grown. The Cooperative Extension Service and the Soil Conservation Service in Conecuh County can provide information and suggestions for growing specialty crops.

Erosion is a major hazard on about four-fifths of the cropland and one-third of the pastureland in Conecuh

Figure 6.—Magnolia trees are a specialty crop because their leaves are used as floral decorations. This orchard is in an area of Troup loamy sand, 2 to 8 percent slopes.

County. If the slope is more than 2 percent, erosion is a potential hazard. Malbis, Greenville, Orangeburg, and Poarch soils are sloping soils presently under cultivation.

Soil loss through erosion is damaging in several ways. Losing the surface layer and incorporating part of the subsoil into the plow layer reduces productivity. Losing the surface layer especially damages soils that have a clayey subsoil, such as Greenville soil, and soils that have plinthite in the lower part of the subsoil that restricts rooting depth, such as Malbis and Poarch soils. Erosion results in sediment that causes off-site damages. Erosion control on farmland minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

Erosion control practices provide protective surface cover, reduce runoff, and increase infiltration. A cropping system that keeps plant cover and crop residue on the land for extended periods can hold erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, legumes and forage can be incorporated into the cropping system to reduce erosion on slopes, to provide nitrogen, and to improve tilth for the crops that follow in the rotation.

Conservation tillage (fig. 7) and crop residue on the surface increase water infiltration and reduce the hazards of runoff and erosion. No-till farming of corn, soybeans, and other crops effectively reduces erosion on slopes. This practice also can be adapted to most soils in Conecuh County.

Terraces and diversions control runoff and reduce erosion. They are most practical on deep, well drained, sloping soils, such as some of the Greenville, Malbis, Orangeburg, and Poarch soils. Bigbee, Bonneau, Fuquay, and Troup soils are not suitable for terracing because these sandy soils are subject to severe erosion if a concentration of water is on the surface. Grassed waterways or underground tile outlets safely drain concentrated water from soils on which terraces and diversions have been installed. Diversions intercept surface runoff from hilly uplands and divert the water around fields on toe slopes at a lower elevation.

Contour farming also reduces erosion on cultivated cropland. It is more suitable on soils that have smooth, uniform slopes, including most areas of the sloping Greenville, Malbis, Orangeburg, and Poarch soils.

Soil blowing is often a hazard on most soils on uplands, especially early in spring. The hazard is most severe on prepared seedbeds. Soil blowing can cause damage if the winds are strong and the soils are dry and do not have plant cover or surface residue. Maintaining plant cover, crop residue, or rough surfaces that are properly tilled minimizes soil blowing. Strips of close-growing crops or small grains are effective windbreaks.

The Conecuh County office of the Soil Conservation Service can provide information on the design of erosion control practices.

Conecuh County has adequate rainfall for common crops, and prolonged droughts are rare. However, rainfall distribution during spring and summer generally is such that periods of drought occur during the growing season of most years. Irrigation helps to prevent drought stress in most years. Most soils commonly used for cultivated crops are suited to irrigation. Cadeville, Conecuh, and Oktibbeha soils, however, have a slow infiltration rate that limits irrigation potential. Poorly drained to moderately well drained soils, such as Atmore, Chrysler, and Izagora soils, rarely need irrigation.

Most soils that are used for crops in Conecuh County have a sandy loam surface layer that is dark and low in organic matter content. Crop residue left on the soil, manure, and other organic material can improve soil structure and reduce crust formation.

The use of large tractors and heavy equipment results in compacted layers in most soils. These layers, or traffic pans, are normally at a depth of 2 to 12 inches and restrict infiltration of water and growth of plant roots.

Figure 7.—Conservation tillage is used for soybeans in an area of Orangeburg sandy loam, 1 to 6 percent slopes. This method reduces runoff and helps to control erosion.

Soils that are likely to develop traffic pans include Cahaba, Greenville, Malbis, Orangeburg, Poarch, and Red Bay soils. Fall plowing is not a good practice on sloping soils that are subject to erosion.

Tilth is important in plant growth and infiltration of water into the soil. Soils that have good tilth have a granular and porous surface layer. Past farming operations and the degree of erosion affect tilth.

Soil fertility is naturally low in most soils in Conecuh County. All soils in the county need applications of ground limestone to neutralize soil acidity. Crops on all soils in the county respond well to fertilizer. Available phosphorus and potash levels are generally low in most of the soils. However, some fields can have a phosphorus or potassium build-up because high rates of commercial fertilizer have been applied to the soil in the past. Additions of lime and fertilizer on all soils should be based on the results of soil tests, on the needs of crops, and on the expected level of yields.

Leaching is a problem on sandy soils, such as Bigbee, Bonneau, Fuquay, and Troup soils. If high rates of nitrogen are used on these soils, split applications are practical.

The Cooperative Extension Service can help to determine what kinds and amounts of fertilizer and lime can be applied.

Wetness is a problem on several soils, such as Atmore, Bethera, Bibb, and Yonges soils. Some of these soils are naturally too wet for crops and pasture plants that are commonly grown in Conecuh County. On other soils, drainage would increase production of crop and pasture plants. In either case, drainage systems can reduce wetness. Surface drainage systems remove water that accumulates on the soil. Subsurface drainage systems lower the water table.

Farming operations on Malbis and Poarch soils that are immediately adjacent to the drainageways can be delayed because these soils are wet in the spring. Subsurface drainage systems can remove excess water from the wet areas. These areas can be planted earlier, and some turn rows can be eliminated.

Soils in Conecuh County are suited to pasture and hay. Bahiagrass, hybrid bermudagrass, and common bermudagrass are the main perennial grasses grown. Wheat, ryegrass, and rye are grown for annual cool-season forages. Millets, sorghums, and hybrid forage sorghums provide most of the annual warm-season forages. Normally, these annuals grow on cropland for temporary grazing. Arrowleaf clover, crimson clover, ball clover, and other cool-season forage legumes can grow on most soils in the county, especially if proper amounts of limestone are applied. Alfalfa, a warm-season legume, adapts to well drained soils, such as Greenville, Malbis, and Orangeburg soils.

Management practices, including proper grazing or cutting at the proper height, weed control, proper fertilizing, rotation grazing, and scattering animal droppings, are needed on soils that produce pasture grass and hay. Atmore soils are better suited to summer grazing because of wetness during winter and early in spring. Overgrazing, low fertilizing, and soils that are high in acid are the greatest concerns in pasture production. Any of these concerns result in weak plants and poor stands that are quickly infested by weeds. The best way to prevent establishment of weeds is to maintain dense ground cover with the desired pasture plants.

Yields Per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that insures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in

grouping the soils do not include major, and generally expensive, landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production. (None in Conecuh County).

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w,* or *s* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w* or *s*.

The capability classification of each map unit is given in the section "Detailed Soil Map Units," and shown in table 6.

Woodland Management and Productivity

Jerry L. Johnson, forester, Soil Conservation Service, helped prepare this section.

Conecuh County has 447,500 acres, or 82 percent of the county, in commercial forest land. Forest acreage increased 4 percent from 1972 to 1982. The increase was the result of tree planting on marginal cropland and reforestation of idle land. Approximately 59 percent of the forest land in the county is privately owned, while industry owns 41 percent of the forest land *(18)*.

The following forest types are in Conecuh County: 51,900 acres of longleaf pine-slash pine, 103,800 acres of loblolly pine-shortleaf pine, 103,800 acres of oak-pine, 116,600 acres of oak-hickory, and 51,900 acres of oak-gum-cypress, and 19,500 acres of nonstocked forest land. Forests in Conecuh County have 90,800 acres of sawtimber, 116,700 acres of poletimber, 220,500 acres of seedlings and saplings, and 19,500 nonstocked acres *(18)*.

Hardwoods grow best in bottom land areas adjacent to streams. Hardwoods growing on sites where they are not suited make poor quality trees. Conecuh County has 382,700 acres that are best suited to pine (fig. 8) and 64,800 acres that are best suited to hardwoods. Approximately 95 percent of the total acreage of forest land in the county has a site index of 80 or above for loblolly pine *(18)*.

In Conecuh County, the value of forest products at the first primary processing point was 11,308,000 dollars in 1982 *(11)*. Forestry accounted for 43 percent of the total revenue of forest and agricultural commodities.

Soils vary in their ability to produce trees. Depth, fertility, texture, and the available water capacity influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site. Available water capacity and depth of the root zone are major influences of tree growth. Elevation and aspect are of particular importance in mountainous areas.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to fertilization than others, some are more susceptible to landslides and erosion after building roads and harvesting timber, and some require special efforts to reforest. In the section "Detailed Soil Map Units," each map unit in the survey area suitable for producing timber presents information about productivity, limitations for harvesting timber, and management concerns for producing timber. The common forest understory plants are also listed. Table 7 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate*, and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

The first tree listed for each soil under the column "Common trees" is the indicator species for that soil. An

Figure 8.—This area of Gritney-Malbis-Fuquay complex, 1 to 8 percent slopes, is suited to loblolly pine.

indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

Table 7 lists the *ordination symbol* for each soil. The first part of the ordination symbol, a number, indicates the potential productivity of a soil for the indicator species in cubic feet per acre. The larger the number, the greater the potential productivity. Potential productivity is based on the site index and the point where mean annual increment is the greatest.

The second part of the ordination symbol, a letter, indicates the major kind of soil limitation for use and management. The letter *W* indicates a soil in which excessive water, either seasonal or year-round, causes a significant limitation. The letter *C* indicates a soil that has a limitation because of the kind or amount of clay in the upper part of the soil. The letter *S* indicates a dry, sandy soil. The letter *F* indicates a soil that has a large amount of coarse fragments in the soil profile. The letter *A* indicates a soil that has no significant restrictions or limitations for forest use and management. If a soil has more than one limitation, the priority is as follows: W, C, S, and F.

Ratings of the *erosion hazard* indicate the probability that damage may occur if site preparation activities or harvesting operations expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion control measures are needed for particular silvicultural activities; and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of *moderate* or *severe* indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning of harvesting and reforestation operations, or use of specialized equipment.

Ratings of *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, or susceptibility of the surface layer to compaction. As slope gradient and length increase, it

becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment must be used. On the steepest slopes, even tracked equipment cannot operate; more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are steep enough that wheeled equipment cannot be operated safely across the slope, if soil wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts ground-based equipment, or if special equipment is needed to avoid or reduce soil compaction. The rating is *severe* if slopes are steep enough that tracked equipment cannot be operated safely across the slope, if soil wetness restricts equipment use for more than 6 months per year, if stoniness restricts ground-based equipment, or if special equipment is needed to avoid or reduce soil compaction. Ratings of *moderate* or *severe* indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management operations.

Ratings of *seedling mortality* refer to the probability of death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall as influenced by kinds of soil or topographic features. *Seedling mortality* is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth and duration of the water table, rock fragments in the surface layer, rooting depth, and the aspect of the slope. Mortality generally is greatest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is between 25 and 50 percent; and *severe* if expected mortality exceeds 50 percent. Ratings of *moderate* or *severe* indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing surface drainage, or providing artificial shade for seedings. Reinforcement planting is often needed if the risk is *moderate* or *severe*.

Ratings of *windthrow hazard* consider the likelihood of trees being uprooted by the wind. Restricted rooting depth is the main reason for windthrow. Rooting depth can be restricted by a high water table, fragipan, or bedrock, or by a combination of such factors as soil wetness, texture, structure, and depth. The risk is *slight* if strong winds cause trees to break but do not uproot them; *moderate* if strong winds cause an occasional tree to be blown over and many trees to break; and *severe* if moderate or strong winds commonly blow trees over. Ratings of *moderate* or *severe* indicate the need for care in thinning or possibly not thinning. Specialized equipment may be needed to avoid damage to shallow root systems in partial cutting operations. A plan for periodic salvage of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. *Plant competition* becomes more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants reduces adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants reduces natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A *moderate* or *severe* rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The potential productivity of *common trees* on a soil is expressed as a *site index*. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate.

The soils that are commonly used to produce timber have the yield predicted in cubic feet. The yield is predicted at the point where mean annual increment culminates. The productivity of the soils in this survey is mainly based on loblolly pine.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The procedures and techniques for determining the site index are given in the site index tables used in this soil survey for Conecuh County *(4, 5, 6, 7, 8, 15)*.

The *productivity* represents an expected volume produced by the most important trees, expressed in cubic feet per acre per year. Cubic feet per acre can be converted to cubic meters per acre by dividing by 14.3. It can be converted to board feet by multiplying by a factor of about 5. For example, a productivity of 114 means the soil can be expected to produce 570 board feet per acre per year at the point where mean annual increment culminates.

Trees to plant are those that are used for reforestation or, if suitable conditions exist, natural regeneration. They are suited to the soils and will produce a commercial wood crop. Desired product, topographic position (such as a low, wet area), and personal preference are three factors of many that can influence the choice of trees to use for reforestation.

Recreation

In table 8, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes, stones, or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Robert E. Waters, biologist, Soil Conservation Service, helped prepare this section.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, and nature study areas, as well as selection of areas on which to manage wildlife habitat for paid hunting, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of soil is rated good, fair, poor, or very poor. These ratings refer only to the potential of the soil, not to the present conditions on a particular site. The ratings consider neither present land use, present wildlife habitat, nor the present wildlife population. Onsite examination can determine these and other conditions. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates

that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, soybeans, wheat, sorghum, oats, barley, millet, cowpeas, and sunflowers.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are bahiagrass, bermudagrass, dallisgrass, johnsongrass, lovegrass, bromegrass, orchardgrass, lespedeza, clover, and vetch.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are dewberry, blackberry, croton, pokeweed, partridge pea, crabgrass, and paspalum.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, the available water capacity, and wetness. Examples of these plants are oak, yellow poplar, cherry, sweetgum, hawthorn, dogwood, persimmon, sassafras, sumac, hickory, viburnum, holly, beech, and hackberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are autumn-olive, crabapple, dogwood, and pyracantha.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and cypress.

Wetland plants are annual and perennial, wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, cattails, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, beaver ponds, and other wildlife ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include bobwhite quail, mourning dove, mockingbird, killdeer, blackbird, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, warblers, vireos, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, rails, kingfishers, muskrat, mink, otter, turtles, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet, and because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations must be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to: evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer, stone content, soil texture, and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. Depth to a high water table, depth to bedrock or to a slowly permeable layer, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a slowly permeable layer, depth to a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, depth to bedrock or a slowly permeable layer, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations

are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock or a slowly permeable layer, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, depth to a water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, and soil reaction affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and releases a variety of plant-available nutrients as it decomposes.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; and embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome;

moderate if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders or organic matter. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a slowly permeable layer, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as aluminum. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the depth of the root zone and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as aluminum, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics. These results are reported in table 17.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(3)* and the system adopted by the American Association of State Highway and Transportation Officials *(2)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 17.

Rock fragments larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area, or from nearby areas, and on field examination.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They influence the soil's absorption of cations, moisture retention, shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely to occur.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare, occasional,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (there is a near 0 to 5 percent chance of flooding in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (there is a 5 to 50 percent chance of flooding in any year). *Frequent* means that flooding occurs often under normal weather conditions (there is more than a 50 percent chance of flooding in any year). *Common* is used when classification as occasional or frequent does not affect interpretations. Duration is expressed as *brief* (2 to 7 days) and *long* (7 days to 1 month). The time of year that floods are most likely to occur is expressed in months. November-May, for example, means that flooding can occur during the period November through May. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely, thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons, which are characteristic of soils that are not subject to flooding.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent;* and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

The two numbers in the "High water table-Depth" column indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that the water table exists for less than a month.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and

on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors creates a severely corrosive environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Physical and Chemical Analyses of Selected Soils

The results of physical analysis of several typical pedons in the survey area are given in table 17 and the results of chemical analysis in table 18. The data are for soils sampled at carefully selected sites. The pedons are typical of the series and are described in the section "Soil Series and Their Morphology." Soil samples were analyzed by the Agronomy and Soils Mineralogy Laboratory, Auburn University, Auburn, Alabama, and the National Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an oven-dry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods *(19)*.

Sand—(0.05-2.0 mm fraction) weight percentages of materials less than 2 mm (3A1).

Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all materials less than 2 mm (3A1).

Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of materials less than 2 mm (3A1).

Extractable acidity—method of Hajek, Adams, and Cope *(10)*.

Cation-exchange capacity—sum of cations (5A3a).

Cation-exchange capacity—ammonium chloride (5A7a).

Base saturation—method of Hajek, Adams, and Cope *(10)*.

Reaction (pH)—1:1 water dilution (8C1a).

Engineering Index Test Data

Table 19 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. Some of the pedons are typical of the series and are described in the section "Soil Series and Their Morphology" and the location of others is indicated by footnotes in table 17. The soil samples were tested by the Alabama Highway Department, Bureau of Materials and Tests, Montgomery, Alabama.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are: AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Mechanical analysis—T 88 (AASHTO), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 423 (ASTM); Plasticity index—T 90 (AASHTO), D 424 (ASTM); Moisture density, Method A—T 99 (AASHTO), D 698 (ASTM).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(17)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Paleudults (*Pale*, meaning excessive development, plus *udult*, the suborder of the Ultisols that has an udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Paleudults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, and soil reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, thermic Typic Paleudults.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series. An example is the Orangeburg series, which belongs to the fine-loamy, siliceous, thermic family of Typic Paleudults.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual (16)*. Many of the technical terms used in the descriptions are defined in *Soil Taxonomy (17)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Arundel Series

The Arundel series consists of moderately deep, well drained, very slowly permeable soils on uplands in the northern part of Conecuh County. These soils formed in clayey marine sediment underlain by siltstone. Slopes range from 4 to 25 percent.

Arundel soils are associated with Conecuh, Luverne, Orangeburg, and Troup soils. Conecuh and Luverne soils are in lower positions on the landscape than Arundel soils and do not have bedrock within 60 inches of the surface. Orangeburg soils have a fine-loamy control

section. Troup soils are on more gently sloping landscapes at a slightly higher elevation and have a sandy epipedon 40 to 80 inches thick.

Typical pedon of Arundel loamy fine sand, 4 to 25 percent slopes; in a clear-cut area 2.5 miles northwest of Interstate Highway 65 on County Road 29, 1.5 miles east on a dirt road, 1.25 miles north on a logging road, 50 feet south of the road, 1,125 feet north and 1,000 feet east of the southwest corner of sec. 20, T. 7 N., R. 12 E.

A—0 to 7 inches; very dark gray (10YR 3/1) loamy fine sand; mixing of brown (10YR 4/3) sandy loam; weak fine granular structure; friable; common fine and medium roots; friable; medium acid; clear wavy boundary.

Bt1—7 to 16 inches; yellowish red (5YR 4/6) clay; common medium distinct dark yellowish brown (10YR 4/6) mottles; moderate or strong medium subangular blocky structure; firm; few fine roots; thin continuous distinct clay films on faces of most peds; extremely acid; gradual wavy boundary.

Bt2—16 to 24 inches; yellowish red (5YR 5/6) clay; common medium distinct yellowish brown (10YR 5/4) and pale brown (10YR 6/3) mottles; moderate or strong medium subangular blocky structure; firm; common mica flakes; 10 percent, by volume, fine siltstone fragments; thin continuous distinct clay films on faces of most peds; few fine and coarse decaying roots; extremely acid; clear wavy boundary.

Cr—24 to 60 inches; brown, gray, and yellow moderately hard siltstone bedrock; massive rock structure; can be cut with a spade.

The solum thickness and depth to bedrock range from 20 to 40 inches. Reaction in the A horizon ranges from extremely acid to medium acid. Reaction in the Bt and BC horizons ranges from extremely acid to strongly acid. Content of siltstone fragments ranges from 0 to 20 percent.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is loamy fine sand, sandy loam, or fine sandy loam. Content of siltstone fragments ranges from 0 to 20 percent.

The Bt horizon has hue of 2.5YR, 5YR, 7.5YR, or 10YR, value of 4 or 5, and chroma of 3 to 6. Texture is clay loam, silty clay, or clay. Siltstone fragments range from 1 to 15 centimeters and from 0 to 15 percent in the lower part of the Bt horizon. Mottles in shades of yellow, red, or gray are in the lower part of the Bt horizon in some pedons.

Some pedons have a BC horizon that has mottles in shades of red, brown, yellow, and gray. Texture is clay, clay loam, and silty clay.

The Cr horizon is moderately hard, gray buhrstone (siltstone) bedrock that can be dug with a spade.

Atmore Series

The Atmore series consists of deep, poorly drained, moderately slowly permeable soils that have plinthite along heads of drainageways and in upland depressions in the southwestern part of Conecuh County. These soils formed in loamy marine sediment. A perched water table is within 12 inches of the surface in winter and early in spring. Slopes range from 0 to 2 percent.

Atmore soils are associated with Fuquay, Gritney, and Malbis soils. The associated soils are better drained than Atmore soils. Fuquay soils are loamy sand to a depth of 20 to 40 inches. Gritney soils have a clayey subsoil. Malbis soils have a yellow fine-loamy control section.

Typical pedon of Atmore fine sandy loam, 0 to 2 percent slopes; 2.6 miles south of Repton on Alabama State Highway 41, 0.3 mile west and 0.1 mile south on a logging road, 2,800 feet north and 1,800 feet west of the southwest corner of sec. 27, T. 5 N., R. 8 E.

A—0 to 4 inches; dark gray (10YR 4/1) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.

E—4 to 14 inches; light brownish gray (10YR 6/2) fine sandy loam; common medium distinct light gray (10YR 7/1) and yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; friable; few fine and medium roots; some coated sand grains; strongly acid; gradual wavy boundary.

Btg—14 to 25 inches; light brownish gray (10YR 6/2) loam; common medium distinct light gray (10YR 7/2) and brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

Btvg1—25 to 38 inches; light gray (10YR 7/2) loam; many medium distinct pale brown (10YR 6/3), light gray (10YR 7/1), and strong brown (7.5YR 5/6) mottles and common medium prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; friable; thin patchy clay films on faces of most peds; 15 to 20 percent, by volume, red (2.5YR 4/6) plinthite; strongly acid; gradual wavy boundary.

Btvg2—38 to 62 inches; mottled light gray (10YR 7/1), light yellowish brown (10YR 6/4), strong brown (7.5YR 5/6), and red (2.5YR 4/6) clay loam; weak medium subangular blocky structure; firm or friable; thin patchy clay films on faces of most peds; 10 percent, by volume, red (2.5YR 4/6) plinthite; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to strongly acid. Depth to a horizon that has more than 5 percent plinthite ranges from 24 to 40 inches.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is fine sandy loam.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. Texture is fine sandy loam. Some pedons do not have an E horizon.

The Btg horizon and Btvg horizon are mottled in shades of gray, brown, red, and yellow; or they have hue of 10YR or 2.5Y, value of 5 or 6, chroma of 1 or 2, and common or many mottles in shades of red, brown, and yellow. Texture is loam or fine sandy loam in the Btg horizon and loam or clay loam in the Btvg horizon.

Bethera Series

The Bethera series consists of deep, poorly drained, slowly permeable soils on low terraces of major streams throughout Conecuh County. They formed in clayey marine sediments. A high water table is within 18 inches of the surface during winter and early in spring. Slopes are 0 to 1 percent.

Bethera soils are associated with Bigbee and Izagora soils. Bigbee soils are at a higher elevation than Bethera soils and are sandy throughout. Izagora soils are at a slightly higher elevation and are better drained.

Typical pedon of Bethera fine sandy loam, in an area of Izagora, rarely flooded-Bethera, occasionally flooded association, 0 to 3 percent slopes; 500 feet west and 250 feet north of the southeast corner of sec. 30, T. 8 N., R. 11 E.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; friable; few fine roots; very strongly acid; clear smooth boundary.

E—2 to 6 inches; grayish brown (10YR 5/2) fine sandy loam; common medium faint yellowish brown (10YR 5/6) and light gray (10YR 7/1) mottles and few fine distinct yellowish red (5YR 5/6) mottles; weak fine subangular blocky structure; friable; few fine roots; very strongly acid; abrupt wavy boundary.

BEg—6 to 10 inches; gray (10YR 6/1) sandy clay loam; many medium distinct pale brown (10YR 6/3), yellowish brown (10YR 5/6), and strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; gradual wavy boundary.

Btg1—10 to 34 inches; gray (10YR 6/1) clay loam; many medium distinct yellowish brown (10YR 5/6), pale brown (10YR 6/3), strong brown (7.5YR 5/6), yellowish red (5YR 5/6), and red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm or friable; very thin patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

Btg2—34 to 58 inches; gray (10YR 5/1) clay loam; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles and common medium distinct red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm and slightly plastic; very thin patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

BCg—58 to 62 inches; gray (10YR 6/1) clay loam; many coarse prominent yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; friable; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to medium acid.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. Texture is silt loam, loam, or fine sandy loam.

The E horizon and BEg horizon have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2; or they are neutral and have value of 4 to 6. Few or common mottles are in shades of yellow, brown, gray, and red. Texture is fine sandy loam, loam, or sandy clay loam. Some pedons do not have an E horizon or a BEg horizon.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. Mottles in shades of red, yellow, and brown are common throughout. Texture is clay loam, silty clay loam, silty clay, or clay.

The BC horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It has few or common mottles in shades of brown. Texture ranges from sandy clay loam to clay.

Bibb Series

The Bibb series consists of deep, poorly drained, moderately permeable soils on narrow flood plains. They formed in recently deposited loamy and sandy alluvial sediments. These soils have a high water table within 12 inches of the surface during winter and spring. They are subject to frequent flooding of brief duration. Slopes are 0 to 1 percent.

Bibb soils are associated with Gritney, Orangeburg, Troup, and Saffell soils. The associated soils are better drained and are on uplands. Gritney soils have a clayey control section. Orangeburg soils have a red, fine-loamy control section. Troup soils have a sandy epipedon 40 to 80 inches thick. Saffell soils have a red, gravelly control section.

Typical pedon of Bibb sandy loam, 0 to 1 percent slopes, frequently flooded; in a wooded area about 6.5 miles west of Range on the Little Escambia River, 3,300 feet east and 100 feet north of the southwest corner of sec. 14, T. 4 N., R. 7 E.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

Ag—6 to 10 inches; dark gray (10YR 4/1) sandy loam; weak fine granular structure; loose; common fine

and medium roots; very strongly acid; gradual wavy boundary.
Cg1—10 to 20 inches; gray (10YR 5/1) sandy loam; structureless; few fine and medium roots; 5 percent, by volume, quartz pebbles; very strongly acid; gradual wavy boundary.
Cg2—20 to 32 inches; mottled gray (10YR 5/1) and light gray (10YR 6/1) sandy loam; common medium distinct dark yellowish brown (10YR 4/4) mottles and few medium distinct yellowish brown (10YR 5/6) mottles; structureless; 5 percent, by volume, quartz pebbles; very strongly acid; gradual wavy boundary.
Cg3—32 to 46 inches; gray (10YR 5/1) and light gray (10YR 6/1) loamy sand, thin lenses of sandy loam; few medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) mottles; structureless; loose; 5 percent, by volume, quartz pebbles; very strongly acid; gradual wavy boundary.
Cg4—46 to 60 inches; light gray (10YR 7/1) loamy sand, thin lenses of sandy loam; structureless; loose; 10 percent, by volume, quartz pebbles; very strongly acid.

Reaction is strongly acid or very strongly acid.

The A horizon has a hue of 10YR, value of 3 to 5, and chroma of 1 or 2. The Ag horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. Texture of the A or Ag horizon is sandy loam, fine sandy loam, or silt loam.

The Cg horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 1 or 2. Texture is stratified silt loam, loam, sandy loam, or loamy sand. Content of small gravel ranges from 0 to 10 percent in the lower part of the Cg horizon.

Bigbee Series

The Bigbee series consists of deep, excessively drained, rapidly permeable, nearly level soils on terraces along major streams throughout Conecuh County. These soils formed in sandy alluvium. These soils are subject to rare flooding of brief duration. The high water table is within 42 to 60 inches of the surface during winter. Slopes are 0 to 1 percent.

Bigbee soils are associated with Bonneau, Cahaba, Chrysler, and Izagora soils. Bonneau and Cahaba soils are at the same elevation or a slightly higher elevation than Bigbee soils and have a loamy argillic horizon. Chrysler and Izagora soils are at a slightly lower elevation, are moderately well drained, and have a clayey or fine-loamy argillic horizon.

Typical pedon of Bigbee sand, 0 to 1 percent slopes, rarely flooded; in a wooded area 2 miles south of Brooklyn on County Road 42 and 3.1 miles south on T.R. Miller Road, NW1/4SW1/4 sec. 22, T. 2 N., R. 13 E.

A—0 to 6 inches; dark grayish brown (10YR 4/2) sand; structureless; loose; many fine and medium roots; very strongly acid; clear smooth boundary.
C1—6 to 23 inches; yellowish brown (10YR 5/6) fine sand; common medium distinct light yellowish brown (10YR 6/4) mottles; structureless; loose; few medium roots; very strongly acid; gradual wavy boundary.
C2—23 to 43 inches; brownish yellow (10YR 6/6) fine sand; few fine faint light yellowish brown mottles; structureless; loose; few fine roots; few fine mica flakes; very strongly acid; gradual wavy boundary.
C3—43 to 53 inches; very pale brown (10YR 7/4) fine sand; common medium distinct brownish yellow (10YR 6/6) and white (10YR 8/1) mottles; structureless; loose; few fine mica flakes; very strongly acid; gradual wavy boundary.
C4—53 to 68 inches; very pale brown (10YR 7/4) fine sand; many medium distinct white (10YR 8/1) and strong brown (7.5YR 5/6) mottles; structureless; loose; few fine mica flakes; medium acid; gradual wavy boundary.
C5—68 to 80 inches; very pale brown (10YR 7/4) fine sand; structureless; loose; few fine mica flakes; medium acid.

The sand is more than 80 inches thick. Reaction is very strongly acid to medium acid.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is fine sand or sand.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 4 to 6. Most pedons have mottles in shades of yellow, brown, and white. Gray mottles are below a depth of 40 inches. Texture is fine sand or sand.

Bonneau Series

The Bonneau series consists of deep, well drained, moderately permeable soils on terraces in Conecuh County. These soils formed in sandy and loamy marine sediments. A high water table is within 42 to 60 inches of the surface during winter. Slopes range from 0 to 2 percent.

Bonneau soils are associated with Bigbee, Cahaba, and Chrysler soils. Bigbee soils are at a slightly lower elevation than Bonneau soils and are sandy throughout. Cahaba soils are at a similar or slightly lower elevation and have a red, fine-loamy argillic horizon within 20 inches of the surface. Chrysler soils are in lower positions on the landscape and have a clayey argillic horizon.

Typical pedon of Bonneau loamy sand, 0 to 2 percent slopes; 1.75 miles east of the junction of U.S. Highway 31 and County Road 24, south on a logging road 0.5 mile, SE1/4NW1/4 sec. 33, T. 5 N., R. 12 E.

A1—0 to 2 inches; dark gray (10YR 4/1) loamy sand; common medium distinct brown (10YR 5/3) mottles; weak fine granular structure; very friable; common fine and medium roots; medium acid; clear wavy boundary.

A2—2 to 10 inches; dark grayish brown (10YR 4/2) loamy fine sand; common medium distinct brown (10YR 5/3) mottles; weak fine granular structure; very friable; common fine and medium roots; medium acid; clear wavy boundary.

E—10 to 28 inches; light yellowish brown (10YR 6/4) loamy fine sand; common medium faint pale brown (10YR 6/3) and brownish yellow (10YR 6/6) mottles and few fine distinct yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; very friable; few medium roots; strongly acid; clear wavy boundary.

Bt1—28 to 43 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few medium roots; few thin patchy faint clay films on faces of some peds; very strongly acid; gradual wavy boundary.

Bt2—43 to 53 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and light gray (10YR 7/1) mottles and few medium prominent red (10R 4/8) and strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few faint thin patchy clay films on faces of some peds; common clean sand grains; very strongly acid; gradual wavy boundary.

Bt3—53 to 72 inches; mottled yellowish brown (10YR 5/6), brownish yellow (10YR 6/6), gray (10YR 6/1), red (10R 4/8), and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few thin patchy faint clay films on faces of some peds; very strongly acid.

The solum ranges from 60 to more than 80 inches in thickness. Reaction is very strongly acid to medium acid except where lime has been added.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 to 3. Texture is loamy fine sand or loamy sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. Texture is loamy fine sand or loamy sand.

The upper part of the Bt horizon has hue of 10YR and 7.5YR, value of 5 or 6, and chroma of 6 or 8. Mottles in shades of gray and red are common. The lower part of the Bt horizon is mottled in shades of brown, gray, red, or yellow. Texture is dominantly sandy loam, sandy clay loam, or fine sandy loam, but ranges to include sandy clay in the lower part of the horizon.

Cadeville Series

The Cadeville series consists of deep, moderately well drained, very slowly permeable soils on uplands of the Coastal Plains. These soils formed in clayey marine sediment. Slopes range from 1 to 8 percent.

Cadeville soils are associated with Malbis, Oktibbeha, Orangeburg, and Saffell soils. Malbis and Oktibbeha soils are at a similar elevation as Cadeville soils. Malbis soils have a fine-loamy control section. Oktibbeha soils are underlain by calcareous material. Orangeburg and Saffell soils are at a higher elevation, have a fine-loamy control section, and are better drained.

Typical pedon of Cadeville fine sandy loam, in an area of Oktibbeha-Cadeville complex, 1 to 8 percent slopes; 5 miles south of Evergreen on County Road 29, 2 miles south of County Road 27, NW1/4NE1/4 sec. 3, T. 11 E., R. 3 N.

A—0 to 4 inches; dark brown (10YR 4/3) fine sandy loam; moderate medium granular structure; friable; common fine and medium roots; 1 percent, by volume, coarse fragments up to 20 mm in diameter; strongly acid; abrupt wavy boundary.

Bt1—4 to 12 inches; yellowish red (5YR 4/6) clay; common medium distinct red (2.5YR 4/6) and pale brown (10YR 6/3) mottles; moderate medium angular blocky structure; very firm; few fine and medium roots; thick continuous clay films on faces of peds; 1 percent, by volume, coarse fragments up to 20 mm in diameter; strongly acid; clear wavy boundary.

Bt2—12 to 20 inches; mottled yellowish red (5YR 4/6), light brownish gray (10YR 6/2), and pale brown (10YR 6/3) clay; strong medium angular blocky structure; very firm; few fine roots; thick continuous clay films on faces of peds; few pressure faces; 1 percent, by volume, coarse fragments up to 20 mm in diameter; very strongly acid; gradual wavy boundary.

Bt3—20 to 40 inches; light brownish gray (10YR 6/2) clay; common medium distinct red (2.5YR 4/6) mottles and few fine faint yellowish brown mottles; moderate medium angular blocky structure; very firm; continuous clay films on faces of peds; few pressure faces; 1 percent, by volume, coarse fragments up to 20 mm in diameter; very strongly acid; gradual wavy boundary.

C1—40 to 52 inches; mottled light brownish gray (10YR 6/2), yellowish brown (10YR 5/6), red (2.5YR 4/6), light red (2.5YR 6/6), and yellowish red (5YR 4/6) silty clay; structureless; very firm; very strongly acid; gradual wavy boundary.

C2—52 to 65 inches; mottled light gray (10YR 7/2) and yellowish brown (10YR 5/6) silty clay; structureless; very firm; very strongly acid; gradual wavy boundary.

C3—65 to 72 inches; mottled light gray (10YR 7/2) and brownish yellow (10YR 6/6) silty clay; structureless; very firm; very strongly acid.

The solum ranges from 40 to 60 inches in thickness. Reaction is extremely acid or very strongly acid throughout except where lime has been added.

The A horizon has hue of 10YR, value of 4, and chroma of 2 or 3. Texture is fine sandy loam or sandy loam.

The upper part of the Bt horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 6. Mottles in shades of red, gray, and brown are common. Texture is clay, silty clay, or clay loam. The lower part of the Bt horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 1 to 6. Most pedons do not have a matrix color and are mottled in shades of red, gray, brown, and yellow. Texture is clay, silty clay, or silty clay loam.

The C horizon is mottled in shades of red, gray, brown, and yellow. Texture is clay or silty clay. Some pedons do not have a C horizon.

Cahaba Series

The Cahaba series consists of deep, well drained, moderately permeable soils on stream terraces in Conecuh County. These soils formed in loamy alluvial and marine sediments. Slopes range from 0 to 3 percent.

Cahaba soils are associated with Bigbee, Bonneau, Chrysler, and Yonges soils. Bigbee soils are at a similar elevation as Cahaba soils and are sandy throughout. Bonneau soils are sandy to a depth of 20 to 40 inches. Chrysler soils have a clayey argillic horizon. Yonges soils are more poorly drained and are at a lower elevation.

Typical pedon of Cahaba sandy loam, 0 to 3 percent slopes, rarely flooded; 2 miles south of Brooklyn on County Road 42 and south on T.R. Miller Road 3.5 miles, SW1/4NW1/4 sec. 28, T. 2 N., R. 12 E.

Ap—0 to 6 inches; dark yellowish brown (10YR 4/4) sandy loam; weak fine granular structure; friable; common fine and medium roots; strongly acid; clear smooth boundary.

BA—6 to 14 inches; yellowish red (5YR 4/6) sandy loam; weak fine subangular blocky structure; friable; few fine roots; very strongly acid; gradual wavy boundary.

Bt1—14 to 28 inches; red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; thin patchy faint clay films on faces of most peds; very strongly acid; gradual wavy boundary.

Bt2—28 to 37 inches; yellowish red (5YR 5/6) sandy loam; weak fine subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

C—37 to 72 inches; strong brown (7.5YR 5/6) loamy sand; loose; very strongly acid.

The solum ranges from 30 to 60 inches in thickness. Reaction ranges from very strongly acid to medium acid except where lime has been added.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is sandy loam, fine sandy loam, or loamy fine sand.

The BA horizon has hue of 5YR, value of 4 or 5, and chroma of 6 or 8. Texture is sandy loam or fine sandy loam. Some pedons do not have a BA horizon.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 or 8. Texture is sandy clay loam or loam and ranges to sandy loam in the lower part of the Bt horizon.

The C horizon has hue of 5YR, 7.5YR, or 10YR, value of 5 or 6, and chroma of 4 to 8. Texture is sand, sandy loam, loamy fine sand, or loamy sand.

Chrysler Series

The Chrysler series consists of deep, moderately well drained, slowly permeable, nearly level to gently sloping soils on major stream terraces. They formed in clayey marine deposits of the Coastal Plains. The water table is within 18 to 36 inches of the surface during winter. Slopes range from 0 to 3 percent.

Chrysler soils are associated with Bigbee, Bonneau, Cahaba, and Yonges soils. Bigbee soils are at a slightly higher elevation than Chrysler soils and are sandy throughout. Bonneau soils are in higher positions on the landscape and are sandy to a depth of 20 to 40 inches. Cahaba soils are in positions similar to those of the Chrysler soil, are well drained, and have a fine-loamy control section. Yonges soils are in the lowest positions on the landscape, are gray throughout, and have a fine-loamy control section.

Typical pedon of Chrysler fine sandy loam, in an area of Chrysler, occasionally flooded-Yonges, frequently flooded association, 0 to 2 percent slopes; about 12 miles east of Evergreen on U.S. Highway 84, 3.1 miles south on Union Camp Road, 1,000 feet east and 800 feet south of the northwest corner of sec. 36, T. 5 N., R. 13 E.

A—0 to 6 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bt1—6 to 15 inches; yellowish red (5YR 4/6) clay; weak medium subangular blocky structure; firm; few fine roots; thin continuous clay films on faces of most peds; very strongly acid; gradual wavy boundary.

Bt2—15 to 23 inches; yellowish red (5YR 4/6) clay; few red (2.5YR 4/6) and light yellowish brown (10YR 6/4) mottles; moderate medium angular blocky structure; firm; continuous clay films on faces of most peds; very strongly acid; gradual wavy boundary.

Bt3—23 to 72 inches; mottled yellowish red (5YR 5/6), red (2.5YR 4/6), yellowish brown (10YR 5/4 and 10YR 5/6), and light brownish gray (10YR 6/2) clay; strong coarse angular blocky structure; firm; continuous clay films on faces of most peds; very strongly acid; gradual wavy boundary.

C—72 to 90 inches; mottled light brownish gray (10YR 6/2), yellowish red (5YR 5/6), yellowish brown (10YR 5/6), and red (2.5YR 4/6) stratified clay, sandy clay loam, clay loam, and sandy loam; moderate medium subangular blocky structure; firm or friable; very strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid except where lime has been added.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. Texture is sandy loam, fine sandy loam, or loam.

Some pedons have an E horizon that has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture is sandy loam or fine sandy loam.

Some pedons have a BE horizon or BA horizon that has hue of 10YR, value of 4 to 6, and chroma of 3 or 4. Texture is sandy loam or fine sandy loam.

The upper part of the Bt horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 to 8. It has few or common mottles in shades of brown, yellow, or red. The lower part of the Bt horizon is mottled in shades of red, yellow, brown, and gray. Texture is clay loam, silty clay loam, silty clay, or clay.

The C horizon is mottled in shades of red, gray, yellow, and brown. Texture is stratified clay, sandy loam, sandy clay loam, or clay loam.

Conecuh Series

The Conecuh series consists of deep, moderately well drained, very slowly permeable soils on uplands in the northern part of Conecuh County. These soils formed in clayey marine sediment. Slopes range from 2 to 8 percent.

Conecuh soils are associated with Arundel and Luverne soils. Arundel soils are on a steeper landscape than Conecuh soils and are underlain by bedrock at a depth of 20 to 40 inches. Luverne soils are at a lower elevation, are well drained, and have mixed clay mineralogy.

Typical pedon of Conecuh sandy loam, 2 to 8 percent slopes; 12.5 miles north of Evergreen on County Road 29, 4.2 miles west on a dirt road, 2,000 feet east and 3,750 feet south of the northwest corner of sec. 27, T. 8 N., R. 11 E.

Ap—0 to 3 inches; yellowish brown (10YR 5/4) sandy loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—3 to 16 inches; red (2.5YR 4/6) clay; weak medium subangular blocky structure; firm; common fine and medium roots; patchy clay films on faces of most peds; very strongly acid; gradual wavy boundary.

Bt2—16 to 23 inches; red (2.5YR 4/6) clay; common medium prominent light gray (10YR 7/1) mottles and few fine distinct strong brown (7.5YR 5/6) and yellowish red (5YR 4/6) mottles; weak medium subangular blocky structure parting to strong very fine angular blocky; firm; few medium roots; patchy clay films on faces of most peds; extremely acid; gradual wavy boundary.

Bt3—23 to 32 inches; red (2.5YR 4/6) clay; common medium prominent light gray (10YR 7/1) and yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure parting to strong very fine angular blocky; firm; few medium roots; patchy clay films on faces of most peds; few mica flakes; extremely acid; gradual wavy boundary.

Bt4—32 to 43 inches; red (2.5YR 4/6) clay; many medium prominent light gray (10YR 7/1), yellowish red (5YR 4/6), and dark red (10R 3/6) mottles and common medium distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure parting to strong very fine angular blocky; firm; patchy clay films on faces of most peds; common mica flakes; extremely acid; gradual wavy boundary.

BC—43 to 50 inches; mottled red (2.5YR 4/6), light gray (10YR 7/1), yellowish red (5YR 4/6), strong brown (7.5YR 5/6), and dark red (10R 3/6) clay; moderate medium subangular blocky structure; common mica flakes; extremely acid; clear smooth boundary.

C—50 to 72 inches; mottled light gray (10YR 7/1), brownish yellow (10YR 6/8), yellowish red (5YR 5/6), and olive yellow (2.5Y 6/6) stratified clayey and loamy material; firm or friable; common mica flakes; extremely acid.

The solum ranges from 40 to 60 inches in thickness. Reaction ranges from extremely acid to strongly acid except where lime has been added.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is loam, sandy loam, and fine sandy loam. Eroded areas have hue of 5YR, value of 4, and chroma of 4.

Some pedons have a BE horizon that has hue of 7.5YR or 10YR, value of 5, and chroma of 4 or 6. Texture is fine sandy loam or sandy loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. Mottles in shades of red, gray, brown, and yellow increase with depth. Texture is clay or silty clay.

The BC horizon and C horizon have hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8, or they are mottled in shades of red, brown, gray, and yellow.

Texture is generally stratified and ranges from clay to sandy clay loam.

Cowarts Series

The Cowarts series consists of deep, well drained, slowly or moderately slowly permeable soils on narrow ridges and side slopes in the southeastern part of Conecuh County. These soils formed in loamy and clayey marine sediments. Slopes range from 2 to 8 percent.

Cowarts soils are associated with Malbis, Orangeburg, and Troup soils. Malbis soils are at a similar elevation as Cowarts soils, but have 5 percent or more, by volume, plinthite. Orangeburg soils are better drained, are at a higher elevation, and have a red, fine-loamy control section. Troup soils are at a lower elevation and have a sandy epipedon 40 to 80 inches thick.

Typical pedon of Cowarts sandy loam, 2 to 8 percent slopes; 50 feet west and 3,000 feet north of the southeast corner of sec. 1, T. 3 N., R. 13 E.

A—0 to 6 inches; brown (10YR 5/3) sandy loam; weak medium granular structure; friable; common medium and fine roots; very strongly acid; clear smooth boundary.

BE—6 to 11 inches; yellowish brown (10YR 5/4) sandy loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; clear wavy boundary.

Bt1—11 to 18 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; thin patchy faint clay films on faces of some peds; very strongly acid; clear wavy boundary.

Bt2—18 to 25 inches; yellowish brown (10YR 5/6) clay loam; common medium distinct strong brown (7.5YR 5/6) and red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm; thin patchy clay films on faces of most peds; very strongly acid; clear wavy boundary.

BC—25 to 33 inches; mottled yellowish red (5YR 5/6), yellowish brown (10YR 5/6), pale brown (10YR 6/3), light gray (10YR 7/1), strong brown (7.5YR 5/6), and red (2.5YR 4/6) clay loam; weak medium subangular blocky structure; firm; very strongly acid; gradual wavy boundary.

C—33 to 60 inches; mottled yellowish brown (10YR 5/8), strong brown (7.5YR 5/6), light gray (10YR 7/2), yellowish red (5YR 5/6), and red (2.5YR 4/6) clay loam; massive; firm and compact; very strongly acid.

The solum ranges from 20 to 40 inches in thickness. Reaction is very strongly acid or strongly acid except where lime has been added.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. Texture is sandy loam or loamy sand.

The BE horizon has hue of 10YR, value of 5, and chroma of 4. Texture is sandy loam. Some pedons do not have a BE horizon.

The Bt horizon has hue of 7.5YR to 10YR, value of 5, and chroma of 4 to 6. Texture is sandy clay loam, clay loam, or sandy clay. Mottles in shades of red, brown, and yellow are common.

The BC horizon and C horizon are firm and compact. They are mottled in shades of red, yellow, brown, and gray. Texture ranges from sandy loam to sandy clay.

Fuquay Series

The Fuquay series consists of deep, well drained, slowly permeable soils on uplands and side slopes in the southern part of Conecuh County. These soils formed in sandy and loamy marine sediments. Slopes range from 0 to 8 percent.

Fuquay soils are associated with Gritney, Malbis, Orangeburg, and Troup soils. Gritney soils are at a slightly lower elevation than Fuquay soils and have a clayey subsoil. Malbis soils are at a similar elevation as Fuquay soils, but are sandy to a depth of less than 20 inches. Orangeburg soils are at a higher elevation, have a red sandy clay loam control section, and do not have plinthite. Troup soils are at a higher elevation and have a sandy epipedon more than 40 inches thick.

Typical pedon of Fuquay loamy sand, 0 to 5 percent slopes; 3.6 miles north of Interstate Highway 65 and County Road 29, 2 miles east on a dirt road, 3,700 feet north and 1,800 feet east of the southeast corner of sec. 30, T. 7 N., R. 12 E.

A—0 to 6 inches; grayish brown (10YR 5/2) loamy sand; single grained; loose; few fine and medium roots; very strongly acid; gradual wavy boundary.

E1—6 to 15 inches; yellowish brown (10YR 5/4) loamy sand; single grained; loose; few fine and medium roots; very strongly acid; gradual wavy boundary.

E2—15 to 29 inches; light yellowish brown (10YR 6/4) loamy sand; few fine faint brownish yellow and pale brown mottles; single grained; very friable; few fine roots; very strongly acid; clear smooth boundary.

Bt—29 to 35 inches; yellowish brown (10YR 5/6) sandy loam; few medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few quartz gravel; about 1 percent, by volume, plinthite nodules; very strongly acid; gradual wavy boundary.

Btv1—35 to 41 inches; yellowish brown (10YR 5/6) sandy clay loam; many medium prominent strong brown (7.5YR 4/6) mottles; weak medium subangular blocky structure; friable; about 8 percent, by volume, plinthite; few thin patchy clay films on

faces of some peds; very strongly acid; gradual wavy boundary.

Btv2—41 to 75 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), yellowish red (5YR 5/6), red (2.5YR 5/6), very pale brown (10YR 7/4), and light gray (10YR 7/2) sandy clay loam; weak or moderate medium subangular blocky structure; firm; about 15 percent, by volume, platy plinthite; few thin patchy clay films on faces of some peds; very strongly acid.

The solum is more than 80 inches thick. Depth to a horizon that has as much as 5 percent, by volume, plinthite ranges from 35 to 50 inches. Reaction is very strongly acid or strongly acid except where lime has been added.

The A horizon has hue of 10YR, value of 5, and chroma of 2 or 3. Texture is loamy sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. Texture is loamy sand or loamy fine sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5, and chroma of 6 or 8. Texture is sandy loam. Some pedons do not have a Bt horizon.

The Btv horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. Some pedons do not have a matrix color and are mottled in shades of yellow, brown, red, and gray. Texture is sandy clay loam or sandy loam.

Greenville Series

The Greenville series consists of deep, well drained, moderately permeable soils on uplands in the central part of Conecuh County. These soils formed in clayey marine sediment. Slopes range from 0 to 7 percent.

Greenville soils are associated with Orangeburg and Troup soils. Orangeburg soils are on a more sloping landscape and have less than 35 percent clay in the control section. Troup soils are on a lower, more sloping landscape and have a sandy epipedon 40 to 80 inches thick.

Typical pedon of Greenville sandy loam, 1 to 5 percent slopes; 5 miles west of Lyeffion High School on County Road 30, 85 feet north of the road, 2,375 feet west and 1,275 feet south of the northeast corner of sec. 22, T. 7 N., R. 10 E.

Ap—0 to 5 inches; dark reddish brown (5YR 3/4) sandy loam, moist and dry; weak fine granular structure; friable; common fine and medium roots; medium acid; abrupt smooth boundary.

BA—5 to 9 inches; dusky red (2.5YR 3/2) sandy clay loam, moist and dry; weak medium subangular blocky structure; friable; common fine roots; few quartz pebbles; medium acid; clear wavy boundary.

Bt1—9 to 40 inches; dark red (2.5YR 3/6) clay, red (2.5YR 4/6) dry; moderate medium subangular blocky structure; friable; few thin patchy distinct clay films on faces of most peds; few fine roots; common small pores, common clean sand grains; very strongly acid; gradual wavy boundary.

Bt2—40 to 80 inches; dark red (10R 3/6) sandy clay, moist and dry; moderate medium subangular blocky structure; friable or firm; thin patchy distinct clay films on faces of most peds; very strongly acid.

The solum is more than 72 inches thick. Reaction ranges from medium acid to very strongly acid except where lime has been added.

The A or Ap horizon has hue of 7.5YR, 5YR, or 2.5YR, value of 3 to 5, and chroma of 2 to 6. Texture is sandy loam, fine sandy loam, or loam.

The BA horizon has hue of 5YR or 2.5YR, value of 3, and chroma of 2 to 6. Texture is sandy loam, sandy clay loam, or sandy clay. Some pedons do not have a BA horizon.

The Bt horizon has hue of 2.5YR or 10R, value of 3, and chroma of 4 or 6. Texture is clay loam, sandy clay, or clay. Some pedons have up to 5 percent, by volume, iron concretions and quartz pebbles.

Gritney Series

The Gritney series consists of deep, well drained, slowly permeable soils on uplands in the southern part of Conecuh County. These soils formed in clayey marine sediment. Slopes range from 2 to 8 percent.

Gritney soils are associated with Fuquay, Malbis, Orangeburg, Saffell, and Troup soils. Malbis and Orangeburg soils are at a similar elevation as Gritney soils, but these associated soils have a loamy Bt horizon. Malbis soils also have more than 5 percent, by volume, plinthite. Saffell and Troup soils are on a lower, more sloping landscape. Saffell soils have a gravelly argillic horizon. Troup soils have a sandy epipedon 40 to 80 inches thick.

Typical pedon of Gritney sandy loam, in an area of Gritney-Malbis-Fuquay complex, 1 to 8 percent slopes; 0.7 mile west of the junction of Interstate Highway 65 and Alabama Highway 41, 1,625 feet west and 500 feet south of the northeast corner of sec. 25, T. 4 N., R. 8 E.

A—0 to 4 inches; brown (10YR 5/3) sandy loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear wavy boundary.

E—4 to 7 inches; light yellowish brown (10YR 6/4) sandy loam; weak medium subangular blocky structure; friable; many fine and medium roots; strongly acid; gradual wavy boundary.

BE—7 to 11 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common fine roots; very strongly acid; gradual wavy boundary.

Bt1—11 to 20 inches; yellowish red (5YR 5/8) clay loam; moderate medium subangular blocky structure; firm; thin patchy faint clay films on faces of most peds; very strongly acid; gradual wavy boundary.

Bt2—20 to 30 inches; yellowish red (5YR 5/8) clay loam; few medium prominent yellowish brown (10YR 5/6), light gray (10YR 7/1), and gray (10YR 6/1) mottles; moderate medium subangular blocky structure; firm; thin patchy faint clay films on faces of most peds; very strongly acid; clear wavy boundary.

Bt3—30 to 53 inches; strong brown (7.5YR 5/8) clay loam; few medium faint yellowish red (5YR 5/6) mottles and few medium prominent light gray (10YR 7/2) mottles; weak medium subangular blocky structure; friable; thin patchy faint clay films on faces of most peds; very strongly acid; clear wavy boundary.

C—53 to 67 inches; yellowish brown (10YR 5/6) sandy clay loam; many medium distinct light gray (10YR 7/1), yellowish red (5YR 4/6), and strong brown (7.5YR 5/6) mottles; massive; firm; very strongly acid.

The solum ranges from 50 to 72 inches in thickness. Reaction is very strongly acid or strongly acid except where lime has been added.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is fine sandy loam or sandy loam.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture is fine sandy loam or sandy loam. Some pedons do not have an E horizon.

The BE horizon has hue of 10YR, value of 5, and chroma of 6. Texture is sandy loam. Some pedons do not have a BE horizon.

The Bt horizon has hue of 5YR, 7.5YR, or 10YR, value of 5, and chroma of 6 or 8. Texture is clay loam, sandy clay loam, sandy clay, or clay.

The C horizon has hue of 5YR, 7.5YR, or 10YR, value of 5 or 6, and chroma of 5 to 8, or it is mottled in shades of red, brown, gray, and yellow. Texture is sandy clay loam.

Halso Series

The Halso series consists of moderately deep, moderately well drained, very slowly permeable soils on uplands in the extreme northeastern part of Conecuh County. These soils formed in clayey marine sediment. Slopes range from 2 to 8 percent.

Halso soils are associated with Luverne soils. Luverne soils are well drained and do not have a Cr horizon.

Typical pedon of Halso sandy loam, 2 to 8 percent slopes; 22 miles north of Evergreen, 2,750 feet east and 500 feet south of the northwest corner of sec. 23, T. 9 N., R. 11 E.

A—0 to 5 inches; brown (10YR 5/3) sandy loam; weak fine granular structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary.

Bt1—5 to 16 inches; red (2.5YR 4/6) clay; strong fine and medium angular blocky structure; sticky and plastic; common fine and medium roots; thick continuous clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—16 to 25 inches; red (2.5Y 4/6) clay; common medium distinct light brownish gray (2.5Y 6/2) mottles and light yellowish brown (2.5Y 6/4) mottles; strong fine and medium angular blocky structure; sticky and plastic; few fine roots; thick continuous clay films on faces of peds; extremely acid; clear wavy boundary.

Bt3—25 to 31 inches; red (2.5YR 4/6) clay; common medium distinct light olive brown (2.5Y 5/6), light brownish gray (2.5Y 6/2), and yellowish red (5YR 4/6) mottles; strong coarse angular blocky structure; few fine roots; thick continuous clay films on faces of peds; extremely acid; gradual wavy boundary.

BC—31 to 41 inches; mottled light brownish gray (10YR 6/4), yellowish red (5YR 4/6), red (2.5YR 4/6), and light brownish gray (2.5Y 6/2) clay; strong coarse subangular blocky structure; sticky and plastic; few fine roots; thick continuous clay films on faces of peds; fragments of red (2.5YR 4/8) clayey shale that has light gray (5Y 7/2), light brownish yellow (2.5Y 6/4), and yellowish red (5YR 4/6) mottles when broken; extremely acid; clear wavy boundary.

C—41 to 48 inches; mottled yellowish red (5YR 4/6), light olive gray (5Y 6/2), and yellowish brown (10YR 5/6) clayey shale; strong platy structure; 20 percent, by volume, (2.5Y 6/4) clay loam; weak fine granular structure; sticky and plastic; extremely acid; abrupt smooth boundary.

Cr—48 to 60 inches; mottled light brownish gray (2.5Y 6/2), yellowish brown (10YR 5/6), and yellowish red (5YR 4/6) clayey shale; strong platy structure; extremely acid.

The solum ranges from 25 to 50 inches in thickness. Reaction ranges from extremely acid to strongly acid except where lime has been added.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is sandy loam or fine sandy loam.

The Bt horizon has hue of 2.5YR, value of 4 or 5, and chroma of 6 or 8. Mottles in shades of red, gray, brown, and yellow increase with depth. Texture is clay.

The BC horizon has hue of 2.5YR, value of 4 or 5, and chroma of 6 or 8, or it is mottled in shades of red, brown, gray, and yellow. Texture is clay.

The C horizon and Cr horizon are mottled in shades of red, brown, gray, and yellow. The clayey shale is highly weathered in the C horizon.

Izagora Series

The Izagora series consists of deep, moderately well drained, moderately to slowly permeable soils on stream terraces throughout Conecuh County. These soils formed in loamy and clayey marine or alluvial deposits. A high water table is within 24 to 36 inches of the surface in winter and early in spring. Slopes range from 0 to 3 percent.

Izagora soils are associated with Bethera and Bigbee soils. Bigbee soils are at a higher elevation than Izagora soils and are sandy throughout. Bethera soils are at a lower elevation, are more poorly drained, and have a clayey control section.

Typical pedon of Izagora loam, in an area of Izagora, rarely flooded-Bethera, occasionally flooded association, 0 to 3 percent slopes; 4 miles north of Interstate Highway 65 on County Road 29, 3,100 feet northeast and 1,700 feet north of the southwest corner of sec. 13, T. 7 N., R. 11 E.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) loam; weak medium granular structure; friable; few fine and medium roots; very strongly acid; abrupt smooth boundary.

E—3 to 8 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium granular structure; friable; few fine roots; very strongly acid; clear wavy boundary.

Bt1—8 to 22 inches; yellowish brown (10YR 5/6) clay loam; few medium distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; few thin patchy clay films on faces of most peds; extremely acid; gradual wavy boundary.

Bt2—22 to 33 inches; yellowish brown (10YR 5/6) clay loam; common medium distinct yellowish red (5YR 5/6), strong brown (7.5YR 5/6), red (2.5YR 4/6), and light brownish gray (10YR 6/2) mottles; weak and moderate medium subangular blocky structure; friable or firm; common thin patchy clay films on faces of most peds; extremely acid; gradual wavy boundary.

Bt3—33 to 62 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), yellowish red (5YR 5/6), light brownish gray (10YR 6/2), pale brown (10YR 6/3), and red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm; common patchy thin clay films on faces of most peds; extremely acid; gradual wavy boundary.

BC—62 to 80 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), light brownish gray (10YR 6/2), and yellowish red (5YR 5/6) clay; weak coarse subangular blocky structure; firm; extremely acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to medium acid except where lime has been added.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. Texture is loam, fine sandy loam, or sandy loam.

The E horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4. Texture is fine sandy loam or sandy loam. Some pedons do not have an E horizon.

Some pedons have a BE horizon that has hue of 10YR, value of 5, and chroma of 4 or 6. Texture is loam, fine sandy loam, or sandy loam.

The Bt horizon has hue of 10YR, value of 5, and chroma of 4 to 8. The upper part of the Bt horizon is clay loam or loam. The lower part is clay or clay loam. In some pedons, the lower part of the Bt horizon does not have a matrix color and is mottled in shades of yellow, brown, red, or gray.

The BC horizon has hue of 10YR or 2.5Y, value of 4 to 8, and chroma of 1 to 6; or it is mottled in shades of red, brown, yellow, or gray. Texture is clay loam or clay.

Luverne Series

The Luverne series consists of deep, well drained, moderately slowly permeable soils on uplands in the northern part of Conecuh County. These soils formed in clayey marine sediment. Slopes range from 2 to 15 percent.

Luverne soils are associated with Arundel and Conecuh soils. Arundel soils are on adjacent side slopes and have bedrock within 40 inches of the surface. Conecuh soils are at a similar or higher elevation than Luverne soils, are more poorly drained, and have soft shale bedrock within 40 to 60 inches of the surface.

Typical pedon of Luverne sandy loam, 2 to 8 percent slopes; in a forested area, 0.25 mile southwest of Bethel, 1,000 feet northwest of a paved road, 1,250 feet west and 750 feet south of the northeast corner of NW1/4 sec. 2, T. 8 N., R. 11 E.

A—0 to 6 inches; yellowish brown (10YR 5/4) sandy loam; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—6 to 14 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; firm; few fine roots; thin continuous clay films on faces of most peds; few fine mica flakes; very strongly acid; gradual wavy boundary.

Bt2—14 to 18 inches; yellowish red (5YR 4/6) clay; common fine distinct yellowish brown (10YR 5/6) and dark red (2.5YR 3/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; thin continuous clay films on faces of most peds; few fine mica flakes; very strongly acid; clear wavy boundary.

Bt3—18 to 28 inches; yellowish red (5YR 4/6) clay loam; common medium distinct yellowish brown (10YR 5/6) mottles and many medium distinct dark red

(2.5YR 3/6) mottles; thin continuous clay films on faces of most peds; common fine mica flakes; very strongly acid; clear smooth boundary.

C1—28 to 40 inches; red (2.5YR 2/6) and yellowish brown (10YR 5/6) stratified lenses of fine sandy loam, sandy clay loam, and clay loam; weak medium platy structure; common (10YR 6/1) shale fragments; friable; common fine mica flakes; extremely acid; gradual smooth boundary.

C2—40 to 65 inches; soft gray (10YR 6/1) shale interbedded with red (2.5YR 4/6) and yellowish brown (10YR 5/6) sandy loam material; clay loam crushed; friable; common fine mica flakes; extremely acid.

The solum ranges from 20 to 50 inches in thickness. Reaction ranges from extremely acid to strongly acid except where lime has been added. Fine mica flakes are few or common throughout.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is sandy loam or fine sandy loam.

Some pedons have a BA or BE horizon that has hue of 10YR, value of 5, and chroma of 4 to 6. Texture is fine sandy loam.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 or 8. Texture is clay or clay loam.

The C horizon is stratified sand, silt, and clay mottled in shades of gray, yellow, red, brown, and white.

Malbis Series

The Malbis series consists of deep, well drained, moderately or moderately slowly permeable soils that have plinthite on ridges and toe slopes throughout Conecuh County. These soils formed in loamy marine sediment. A perched high water table is within 30 to 48 inches of the surface in winter and early in spring. Slopes range from 1 to 6 percent.

Malbis soils are associated with Fuquay, Gritney, Orangeburg, Poarch, and Troup soils. Fuquay soils are at a similar to slightly lower elevation than Malbis soils and have a sandy epipedon 20 to 40 inches thick. Gritney soils have a clayey control section. Orangeburg and Troup soils are at a higher elevation and do not have a horizon that has at least 5 percent, by volume, plinthite. Orangeburg soils also have a red, fine-loamy control section. Troup soils have a sandy epipedon 40 to 80 inches thick. Poarch soils are at a similar or a slightly lower elevation and have a coarse-loamy control section.

Typical pedon of Malbis sandy loam, 1 to 6 percent slopes; 0.1 mile east of L Pond Church of Christ, NE1/4NW1/4 sec. 27, T. 4 N., R. 11 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) sandy loam; weak fine granular structure; friable; common fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—6 to 15 inches; yellowish brown (10YR 5/6) loam; few fine faint yellowish brown mottles; weak medium subangular blocky structure; friable; few fine and medium roots; few thin patchy clay films on faces of some peds; few medium pores; strongly acid; clear smooth boundary.

Bt2—15 to 28 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few thin patchy clay films on ped faces; very strongly acid; clear smooth boundary.

Bt3—28 to 37 inches; yellowish brown (10YR 5/6) sandy clay loam; weak and moderate medium subangular blocky structure; friable or firm, slightly brittle and compact in place; 4 percent, by volume, red (2.5YR 4/6) nodular plinthite; patchy clay films on faces of some peds; very strongly acid; clear wavy boundary.

Btv1—37 to 50 inches; strong brown (7.5YR 5/6) sandy clay loam; pale brown (10YR 6/3) streaks; moderate medium subangular blocky structure; friable or firm, slightly brittle and compact in place; 15 percent, by volume, red (2.5YR 4/6) nodular plinthite; patchy clay films on faces of some peds; strongly acid; clear wavy boundary.

Btv2—50 to 72 inches; mottled strong brown (7.5YR 5/6), yellowish brown (10YR 5/6), and red (2.5YR 4/6) sandy clay loam; pale brown (10YR 6/3) and very pale brown (10YR 7/3) streaks; moderate medium subangular blocky structure; firm, compact in place; 15 percent, by volume, platy plinthite; strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid to medium acid except where lime has been added. Depth to a horizon that has at least 5 percent plinthite ranges from 24 to 42 inches.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is sandy loam or fine sandy loam.

Some pedons have a BE horizon that has hue of 10YR, value of 4 or 5, and chroma of 6 or 8. Texture is loam or sandy clay loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. Texture is loam, sandy clay loam, and clay loam.

The Btv horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8, and has mottles in shades of red, brown, yellow, and gray. Gray vertical seams are common throughout the lower part of the subsoil. Texture is sandy clay loam or clay loam. Plinthite ranges from 5 to more than 15 percent, by volume.

Oktibbeha Series

The Oktibbeha series consists of deep, moderately well drained, very slowly permeable soils on uplands of

the Coastal Plains. These soils formed in clayey marine sediment. Slopes range from 0 to 15 percent.

Oktibbeha soils are associated with Cadeville, Orangeburg, and Saffell soils. Cadeville soils are at a similar elevation as Oktibbeha soils but have less clay. Orangeburg and Saffell soils are at a higher elevation and have a fine-loamy control section.

Typical pedon of Oktibbeha clay loam, in an area of Oktibbeha-Cadeville complex, 1 to 8 percent slopes; 5 miles south of Evergreen on County Road 29 near Jay Villa, NE1/4NW1/4 sec. 34, T. 4 N., R. 11 E.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) clay loam; weak medium subangular blocky structure; friable; common medium roots; very strongly acid; clear smooth boundary.

Bt1—3 to 8 inches; red (2.5YR 4/6) clay; common medium distinct pale brown (10YR 6/3) mottles; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; extremely acid; clear wavy boundary.

Bt2—8 to 16 inches; red (2.5YR 5/6) clay; few fine distinct light brownish gray (2.5YR 6/2) mottles and common medium distinct pale brown (10YR 6/3) mottles; moderate fine and medium subangular blocky structure; firm, plastic; few thin clay films and pressure faces on faces of some peds; few fine roots; extremely acid; clear wavy boundary.

Bt3—16 to 36 inches; mottled red (2.5YR 5/6), yellowish red (5YR 5/6), light gray (10YR 7/1), and light brownish gray (2.5YR 6/2) clay; moderate medium subangular blocky structure; firm, plastic; few thin patchy clay films on ped faces; common pressure faces; extremely acid; clear smooth boundary.

C1—36 to 48 inches; yellowish brown (10YR 5/8) clay; many medium very dark gray (10YR 3/1) concretions; massive; very firm; intersecting slickensides, wedge-shaped aggregates; common calcium carbonate concretions; slightly acid; gradual wavy boundary.

C2—48 to 60 inches; yellowish brown (10YR 5/8) marly clay; massive; very firm; many calcium carbonate concretions; calcareous, moderate effervescence; moderately alkaline.

The solum ranges from 20 to 50 inches in thickness. Reaction ranges from extremely acid to slightly acid in the A and Bt horizons and from slightly acid to moderately alkaline in the C horizon. Depth to bedrock is more than 60 inches.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is fine sandy loam, loam, silty clay loam, or clay loam.

Some pedons have a BA or BE horizon that has hue of 10YR, value of 4 to 6, and chroma of 4 to 8. Texture is clay loam, loam, or silty clay loam.

The upper part of the Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. Mottles that have chroma of 2 range in depth from 10 to 20 inches below the top of the argillic horizon. Some pedons do not have a matrix color and are mottled in shades of yellow, brown, red, and gray. Texture is clay. The lower part of the Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. Some pedons are mottled in shades of yellow, brown, red, and gray. Texture is clay.

The C horizon has hue of 10YR or 2.5Y, value of 6 to 8, and chroma of 3 to 8. It is generally mottled in shades of brown and yellow. Few to many calcium carbonate concretions are in this horizon. The C horizon is slightly to strongly effervescent. Texture is clay or silty clay.

Orangeburg Series

The Orangeburg series consists of deep, well drained, moderately permeable soils on ridges and side slopes throughout Conecuh County. These soils formed in loamy marine sediment. Slopes range from 1 to 20 percent.

Orangeburg soils are associated with Greenville, Malbis, and Troup soils. Greenville soils have a dark red clayey argillic horizon. Malbis soils are on a less sloping landscape at a higher elevation than Orangeburg soils and have a yellow Bt horizon that has more than 5 percent, by volume, plinthite. Troup soils are at a similar elevation as the Orangeburg soils but have a sandy epipedon 40 to 80 inches thick.

A typical pedon of Orangeburg sandy loam, 1 to 6 percent slopes; 7.3 miles north of Evergreen on County Road 29, 0.6 mile east on a dirt road, and 0.3 mile south on a log road, 1,100 feet west and 1,650 feet north of southeast corner of sec. 25, T. 7 N., R. 11 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) sandy loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

BA—6 to 12 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; common fine roots; strongly acid; clear wavy boundary.

Bt1—12 to 20 inches; yellowish red (5YR 4/6) sandy loam; weak medium subangular blocky structure; friable; thin patchy clay films on faces of some peds; few fine roots; strongly acid; gradual wavy boundary.

Bt2—20 to 72 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; thin discontinuous clay films on faces of most peds; few fine roots; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to medium acid except where lime has been added.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is fine sandy loam, sandy loam, or loamy sand.

The BA or BE horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. Texture is fine sandy loam or sandy loam. Eroded areas have a sandy clay loam texture. Some pedons do not have a BA or BE horizon.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. Texture is sandy clay loam. In some pedons, the lower part of the Bt horizon is sandy clay.

Poarch Series

The Poarch series consists of deep, well drained or moderately well drained, moderately or moderately slowly permeable soils that have plinthite. These soils are on broad uplands and toe slopes in the south-central part of Conecuh County. They formed in loamy marine sediment. A perched high water table is within 30 to 60 inches of the surface in winter and early in spring. Slopes range from 0 to 5 percent.

Poarch soils are associated with Malbis, Fuquay, and Troup soils. Malbis soils are at a slightly higher elevation than Poarch soils and have a fine-loamy control section. Troup soils are at a similar or slightly higher elevation and have a loamy sand epipedon 40 to 80 inches thick. Fuquay soils have a sandy epipedon 20 to 40 inches thick.

Typical pedon of Poarch sandy loam, 0 to 5 percent slopes; 0.75 mile east of the junction of County Roads 42 and 43, 0.8 mile north of County Road 43 on a dirt road, and 30 feet east of the dirt road, SE1/4SW1/4 sec. 28, T. 4 N., R. 12 E.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; very friable; many fine and medium roots: strongly acid; clear wavy boundary.

E—3 to 8 inches; brown (10YR 5/3) sandy loam; weak fine granular structure; very friable; common fine and medium roots; strongly acid; gradual wavy boundary.

Bt1—8 to 18 inches; light yellowish brown (2.5Y 6/4) sandy loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.

Bt2—18 to 35 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.

Bt3—35 to 44 inches; yellowish brown (10YR 5/6) sandy loam; common medium distinct light gray (10YR 7/1) and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; 3 percent, by volume, nodular plinthite; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.

Btv1—44 to 62 inches; yellowish brown (10YR 5/6) sandy loam; common medium prominent gray (10YR 6/1) and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; 8 percent, by volume, nodular plinthite; sand grains coated and bridged with clay; very strongly acid; gradual smooth boundary.

Btv2—62 to 72 inches; mottled light gray (10YR 7/1), yellowish brown (10YR 5/4 and 5/6), and strong brown (7.5YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; 15 percent, by volume, nodular and platy plinthite; very strongly acid.

The solum is 60 to more than 90 inches thick. Reaction is very strongly acid or strongly acid except where lime has been added. Depth to a horizon that has at least 5 percent plinthite ranges from 28 to 56 inches.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 3. Texture is fine sandy loam, sandy loam, or loam.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 or 4. Texture is sandy loam or loam. Some pedons do not have an E horizon.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 4 to 8. Texture is loam, sandy loam, or fine sandy loam.

The Btv horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 to 7; or it is mottled in shades of red, brown, gray, or yellow. Texture is sandy loam, loam, or sandy clay loam.

Some pedons have a BC horizon that is mottled in shades of red, yellow, brown, olive, and gray. Texture is loam, sandy loam, or sandy clay loam.

Red Bay Series

The Red Bay series consists of deep, well drained, moderately permeable soils on uplands in the central part of Conecuh County. They formed in loamy marine deposits. Slopes range from 1 to 5 percent.

Red Bay soils are associated with Bibb, Malbis, and Greenville soils. Bibb soils are on flood plains and are poorly drained. Malbis soils are at a similar elevation as Red Bay soils, are more yellow, and have more than 5 percent, by volume, plinthite. Greenville soils are at a similar or slightly higher elevation and have a dark red clayey argillic horizon.

Typical pedon of Red Bay sandy loam, 1 to 5 percent slopes; 0.1 mile south of Fairview Church of Christ, 1,000 feet north and 200 feet west of the southeast corner of sec. 13, T. 5 N., R. 10 E.

Ap—0 to 5 inches; dark reddish brown (5YR 3/2) sandy loam; weak fine granular structure; friable; common fine and medium roots; strongly acid; abrupt smooth boundary.
Bt1—5 to 9 inches; mixed dark red (2.5YR 3/6) and dark reddish brown (2.5YR 3/4) sandy clay loam; weak fine subangular blocky structure; friable; common fine roots; very strongly acid; clear wavy boundary.
Bt2—9 to 21 inches; dark red (2.5YR 3/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few thin patchy clay films on faces of most peds; strongly acid; clear smooth boundary.
Bt3—21 to 66 inches; dark red (2.5YR 3/6) sandy clay loam; weak medium subangular structure; friable; few thin patchy clay films on faces of most peds; very strongly acid; clear smooth boundary.
BC—66 to 80 inches; yellowish red (5YR 5/6) sandy loam; weak fine and medium subangular blocky structure; friable; very strongly acid; clear smooth boundary.

The solum is more than 60 inches thick. Reaction is strongly acid or very strongly acid except where lime has been added.

The A or Ap horizon has hue of 2.5YR to 7.5YR, value of 3 or 4, and chroma of 2 to 4. Texture is fine sandy loam or sandy loam.

Some pedons have a BE or BA horizon that has hue of 2.5YR or 5YR, value of 3, and chroma of 4 or 6. Texture is sandy clay loam.

The Bt horizon has hue of 2.5YR or 10R, value of 3, and chroma of 4 or 6. Texture is sandy clay loam. Texture is clay loam in the lower part of the Bt horizon in some pedons, generally below a depth of 40 inches. Some pedons have up to 5 percent, by volume, iron concretions and quartz pebbles.

The BC horizon has hue of 2.5YR to 7.5YR, value of 3 to 6, and chroma of 6 to 8. Texture is sandy clay loam or sandy clay. Some pedons do not have a BC horizon.

Saffell Series

The Saffell series consists of deep, well drained, moderately permeable soils on narrow ridges and steep side slopes in the southwestern part of Conecuh County. These soils formed in loamy and gravelly marine deposits. Slopes range from 8 to 35 percent.

Saffell soils are associated with Cadeville, Gritney, Oktibbeha, Orangeburg, and Troup soils. Cadeville, Gritney, and Oktibbeha soils are at a lower elevation than Saffell soils and have a clayey control section. Orangeburg and Troup soils are at a similar elevation as the Saffell soils but do not have a gravelly control section. Troup soils also have a sandy epipedon 40 to 80 inches thick.

Typical pedon of Saffell gravelly loamy fine sand, in an area of Oktibbeha-Saffell complex, 5 to 25 percent slopes; 3.5 miles south of Belleville, 500 feet south and 1,750 feet west of the northeast corner of sec. 27, T. 4 N., R. 9 E.

A—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly loamy fine sand; weak fine granular structure; loose; few fine and medium roots; 20 percent, by volume, quartz pebbles; very strongly acid; clear smooth boundary.
Bt1—5 to 11 inches; yellowish red (5YR 4/6) very gravelly sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few thin patchy clay films on faces of most peds; 35 percent, by volume, quartz pebbles; strongly acid; gradual wavy boundary.
Bt2—11 to 28 inches; red (2.5YR 4/6) very gravelly sandy clay loam; weak medium subangular blocky structure; friable; thin patchy clay films on faces of most peds; 50 percent, by volume, quartz pebbles; very strongly acid; gradual wavy boundary.
BC—28 to 43 inches; red (2.5YR 4/6) very gravelly loamy sand; weak fine subangular blocky structure; friable; sand grains coated and bridged with clay, clay coatings on pebbles; 50 percent, by volume, quartz pebbles; very strongly acid; gradual wavy boundary.
C—43 to 60 inches; yellowish red (5YR 5/6) extremely gravelly loamy sand; weak fine granular structure; loose; 60 to 80 percent, by volume, quartz pebbles; very strongly acid.

The solum is 35 to 60 inches thick. Reaction is very strongly acid or strongly acid.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is gravelly loamy fine sand or gravelly sandy loam that has 15 to 35 percent, by volume, quartz pebbles 2 to 50 millimeters in diameter.

Some pedons have a BE horizon that has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. Texture is gravelly sandy loam or very gravelly sandy loam that has 15 to 60 percent, by volume, quartz pebbles 2 to 50 millimeters in diameter.

The Bt horizon has hue of 2.5YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. Texture is very gravelly loam, very gravelly sandy clay loam, or very gravelly clay loam that has 35 to 65 percent, by volume, quartz pebbles 2 to 75 millimeters in diameter.

The BC horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. Texture is very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loamy sand, and extremely gravelly loamy sand that has 35 to 75 percent, by volume, quartz pebbles 2 to 75 millimeters in diameter.

The C horizon has hue of 5YR, value of 4 or 5, and chroma of 6 or 8. Texture is very gravelly loamy sand and extremely gravelly loamy sand that has 35 to 80

percent, by volume, quartz pebbles 2 to 75 millimeters in diameter.

Troup Series

The Troup series consists of deep, well drained soils on uplands throughout Conecuh County. They formed in thick sandy and loamy marine deposits. These soils are rapidly permeable in the surface and subsurface layers and moderately permeable in the subsoil. Slopes range from 2 to 25 percent.

Troup soils are associated with Arundel, Cadeville, Malbis, Greenville, Gritney, Orangeburg, Fuquay, and Saffell soils. None of the associated soils have a sandy epipedon as thick as 40 inches. Arundel soils are on a steeper, more dissected landscape than Troup soils, are clayey, and have bedrock at a depth of 20 to 40 inches. Cadeville, Greenville, and Gritney soils are on a smoother, less sloping landscape and have a clayey control section. Malbis and Fuquay soils are on a smoother, lower landscape and have a fine-loamy control section. Saffell soils are on a steeper, more dissected landscape and have a gravelly control section. Orangeburg soils are on a landscape similar to that of the Troup soils but have a red fine-loamy control section.

Typical pedon of Troup loamy sand, 2 to 8 percent slopes; 4.9 miles north of Centernary Church, 3,375 feet east and 1,825 feet south of the northwest corner of sec. 33, T. 8 N., R. 10 E.

A—0 to 7 inches; dark brown (10YR 4/3) loamy sand; pockets of very dark grayish brown (10YR 3/2) loamy sand; single grained; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

E1—7 to 28 inches; yellowish brown (10YR 5/6) loamy sand; common medium distinct light yellowish brown (10YR 6/4) mottles; pockets of clean sand grains; single grained; very friable; common fine and medium roots; strongly acid; gradual wavy boundary.

E2—28 to 42 inches; strong brown (7.5YR 5/6) loamy sand; common medium distinct light yellowish brown (10YR 6/4) mottles; pockets of clean sand grains; single grained; very friable; strongly acid; gradual wavy boundary.

E3—42 to 54 inches; strong brown (7.5YR 5/6) loamy sand; common medium distinct light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/6) mottles; single grained; very friable; very strongly acid; gradual wavy boundary.

E4—54 to 62 inches; yellowish red (5YR 5/8) loamy sand; common medium distinct light yellowish brown (10YR 6/4) mottles; single grained; very friable; very strongly acid; clear wavy boundary.

Bt1—62 to 70 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

Bt2—70 to 78 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; thin patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

Bt3—78 to 92 inches; red (10R 4/8) sandy clay loam; weak medium subangular blocky structure; friable; thin patchy clay films on faces of some peds; common mica flakes; very strongly acid.

The solum is more than 80 inches thick. The combined thickness of the A and E horizons ranges from 40 to more than 70 inches. Reaction is very strongly acid or strongly acid except where lime has been added. Gravel ranges from 0 to 5 percent, by volume.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. Texture is sand, loamy sand, or loamy fine sand.

The E horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 6. Texture is sand, loamy sand, or loamy fine sand.

Some pedons have a BE horizon that has hue of 5YR or 7.5YR, value of 5, and chroma of 6 or 8. Texture is sandy loam.

The Bt horizon has hue of 10R to 5YR, value of 4 or 5, and chroma of 6 or 8. Texture is sandy loam or sandy clay loam.

Yonges Series

The Yonges series consists of deep, poorly drained, moderately slowly permeable soils on flood plains and stream terraces. These soils formed in loamy alluvial sediment. These soils have a high water table within 12 inches of the surface during winter and early in spring. They are also subject to frequent flooding for brief periods during winter and early in spring. Slopes range from 0 to 2 percent.

Yonges soils are associated with Bigbee, Bonneau, Cahaba, and Chrysler soils. The associated soils are at a higher elevation than Yonges soils. Bigbee, Bonneau, and Cahaba soils are well drained. Chrysler soils are moderately well drained and have a clayey subsoil.

Typical pedon of Yonges loam, in an area of Chrysler, occasionally flooded-Yonges, frequently flooded association, 0 to 2 percent slopes; 2 miles south of Brooklyn on County Road 42, and south on T.R. Miller Road 2.5 miles, SE1/4NE1/4 sec. 21, T. 2 N., R. 13 E.

A—0 to 3 inches; dark gray (10YR 4/1) loam; weak fine granular structure; friable; common fine roots; strongly acid; clear smooth boundary.

E—3 to 7 inches; light gray (10YR 6/1) sandy loam; weak medium granular structure; friable; common fine roots; medium acid; clear smooth boundary.

Btg1—7 to 17 inches; light brownish gray (10YR 6/2) sandy clay loam; many medium distinct brown (10YR 5/3) mottles and common medium distinct

yellowish brown (10YR 5/6) mottles; weak medium angular blocky structure; friable; thin patchy clay films on faces of some peds; medium acid; gradual wavy boundary.

Btg2—17 to 42 inches; grayish brown (10YR 5/2) clay loam; common medium distinct brown (10YR 5/3) mottles and few medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; thin patchy clay films on faces of some peds; mildly alkaline; gradual wavy boundary.

Btg3—42 to 57 inches; light olive gray (5Y 6/2) sandy clay loam; common medium distinct brownish yellow (10YR 6/6) mottles and few fine distinct reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; friable; neutral; gradual wavy boundary.

BCg—57 to 77 inches; mottled light brownish gray (10YR 6/2), brownish yellow (10YR 6/6), yellowish brown (10YR 5/6), and reddish yellow (7.5YR 6/8) sandy loam; weak fine subangular blocky structure; friable; neutral; gradual wavy boundary.

Cg—77 to 90 inches; dark gray (5Y 4/1) sandy loam; structureless; mildly alkaline.

The solum is more than 60 inches thick. Reaction ranges from strongly acid to neutral in the upper part of the solum and from slightly acid to moderately alkaline in the lower part.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 0 to 2. Mottles of higher chroma are common. Texture is fine sandy loam, sandy loam, or loam.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. Some pedons have mottles that have colors of higher chroma. Texture is loamy fine sand, sandy loam, or fine sandy loam. Some pedons do not have an E horizon.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2, or it is neutral and has value of 4 to 7. Mottles in shades of gray, brown, yellow, and red are common in most pedons. Texture is clay loam or sandy clay loam. In some pedons, the lower part of the Btg horizon is sandy clay.

The BCg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2; is neutral and has value of 4 to 7; or is mottled in shades of gray, brown, yellow, and red. Texture is sandy loam, sandy clay loam, or clay loam. Some pedons do not have a BCg horizon.

The Cg horizon generally has mottles in shades of gray, brown, and yellow. Texture ranges from sandy loam to clay. Some pedons do not have a Cg horizon.

Formation of the Soils

The processes involved in the formation of soil horizons are accumulation of organic matter, leaching of calcium carbonate and bases, reduction and transfer of iron, and formation and translocation of silicate clay minerals. These processes can occur in combination or individually, depending on the integration of the factors of soil formation.

The A, E, B, and C horizons are the four main horizons in most soils.

The A horizon is the surface layer. This horizon has the maximum accumulation of organic matter. The E horizon, or the subsurface layer, has the maximum loss of soluble or suspended material. Gritney soils have an A horizon and an E horizon. Other soils, such as Greenville soils, have an A horizon but do not have an E horizon. Organic matter has accumulated in the surface layer of all soils in Conecuh County to form an A horizon. The organic matter content in the soils varies because of differences in relief, wetness, and inherent fertility.

The B horizon, or the subsoil, lies immediately below the A or E horizon. This horizon has the maximum accumulation of dissolved or suspended material, such as organic matter, iron, or clay. The B horizon has not developed in very young soils, such as Bibb soils.

The C horizon, or the substratum, has been affected very little by soil-forming processes but can be somewhat modified by weathering.

Gleying is the chemical reduction and transfer of iron. It is evident by the gray subsoil and gray mottles in other horizons in the wet soils of the county. Some horizons, such as in the Poarch soils, have reddish brown mottles and concretions, indicating a segregation of iron.

Carbonates and bases have been leached in most soils of the county, and this action contributes to the development of the horizons and to the inherent low fertility and acid reaction of these soils.

In uniform material, natural drainage generally is closely associated with slope or relief. Soils that formed under good drainage conditions, such as Orangeburg soils, have a uniformly bright color subsoil. Soils that formed under poor drainage conditions, such as Atmore soils, have grayish color. Soils that formed under moderate drainage conditions, such as Chrysler and Izagora soils, have a subsoil that is mottled gray and brown. The grayish color persists even after artificial drainage is provided.

In steep areas, erosion removes surface soil. In low-lying areas or depressions, soil material often accumulates and adds to the thickness of the surface layer. In other areas, the formation and removal of soil material are in equilibrium with soil development.

The presence or absence of relief is also related to the eluviation of clay from the E horizon and to the Bt horizon.

Factors of Soil Formation

This section describes the principal factors of soil formation and how these factors have affected the soils of Conecuh County.

Soil is formed by the interaction of parent material, climate, flora and fauna, relief, and time. The dominance of any one of these factors varies from one location to another. These factors are interrelated, and the effect of any one of the soil-forming factors is influenced to some degree by all of the others.

Parent Material

Parent material is the unconsolidated mass from which a soil forms. It contributes greatly to the chemical and mineral composition of a soil. Most of the soils in Conecuh County formed in parent material consisting of marine sediment.

Soils on uplands, such as the Greenville, Luverne, Malbis, Orangeburg, and Troup soils, formed in place from marine sediment. Soils developed from water-transported material are along most of the larger streams in the county. These include soils developed on stream terraces and in first bottoms on flood plains. The Bigbee, Bonneau, Cahaba, Chrysler, and Izagora soils developed on stream terraces, have been in place for a long period, and have developed distinct horizons. Soils of the first bottom, such as Bibb soils, receive new soil material and have a weakly developed profile.

Climate

Climate is active in soil formation through precipitation and temperature affecting the physical, chemical, and biological components of the soil. High amounts of rainfall each year and warm temperatures cause the biological, chemical, and physical reactions to proceed rapidly in the soil. Water dissolves minerals, increases chemical reactions, supports biological activity, and

transports mineral and organic residue through the soil. The large amounts of water moving through the soil leach most nutrients, soluble bases, and organic matter beyond the root zone. Many fine particles resist further weathering and move from the surface layer down into the soil, resulting in a sandy surface layer and a fine textured subsoil. Most coarse quartz particles left in the upper part of the soil are highly resistant to further weathering. As a result of these actions, most soils in temperate regions are low in natural fertility and organic matter content, are acid, are strongly weathered, and have a sandy surface layer. Conecuh County has a temperate, humid climate.

Flora and Fauna

Plant and animal organisms greatly influence soil formation and the character of the soil. The other factors of soil formation determine trees, grasses, earthworms, rodents, fungi, bacteria, and other forms of plant and animal life. Animal activity is mostly confined to the surface layer of the soil. The soil is continually mixed by their activity, which helps water infiltration. Plant roots create channels through which air and water move more rapidly, thus improving the soil structure and increasing the rate of chemical reaction.

Micro-organisms help decompose organic matter, which releases plant nutrients into the soil. These plant nutrients and chemicals are used in the chemical reactions or weathering of the soil, or are either used by the plants or leached from the soil. Human activities that influence the plant and animal population are important to future soil formation.

The native vegetation of the soils on uplands in Conecuh County consisted of coniferous and deciduous trees as dominant overstory. The understory was gallberry, southern bayberry, holly, panicum, bluestem, American beautyberry, indiangrass, longleaf uniola, and dogwood. These plants represent only a limited variety that once grew in this county and can be used as a guide to plants presently in the county.

The species distribution of fauna also reflects these plant communities. The animals have an impact on the soil properties of a particular area, such as the aeration that worms, moles, armadillos, and gophers provide to a compacted soil. Also, microbes of a particular plant community react to various soil conditions and consequently influence the soil profile by providing decayed plant and animal organic matter and nitrogen to the soil matrix.

Relief

Relief influences soil formation by its effect on runoff, erosion, movement of water within the soil, plant cover, and, to some extent, soil temperature. The relief of Conecuh County ranges from about 80 feet above sea level along the confluence of the Sepulga River and Conecuh River to about 580 feet above sea level near Midway. The slope ranges from nearly level to steep. As the slope increases, runoff and the hazard of erosion increase and less water enters and moves through the soil.

Time

The formation of soils that have distinct horizons requires time but mostly depends on other soil-forming processes. Soil formation generally requires less time in a humid, warm region than in a dry or cold region. Fine-textured parent material develops into soil more slowly than coarse-textured material.

Geologically, the soils in Conecuh County are young. However, if the degree of development is considered, the soils range from fairly old to very young. The more mature soils on uplands, such as the Greenville, Luverne, and Orangeburg soils, formed in marine sediment that has undergone considerable weathering. Most of these soils have fairly strong horizon development and are considered to have reached equilibrium with the environment.

Some of the younger soils in the county, such as Chrysler and Izagora soils, are on stream terraces. These soils formed in alluvial material that no longer receives new or additional soil material. They are weakly developed, but their horizons are genetically related.

The youngest soils in the county, such as Bibb and Bigbee soils, developed in alluvium on first bottoms along streams. They are frequently flooded and receive additional sediment from each flood. They have not been changed enough by the soil-forming process to have well defined horizons. Except for a well defined surface layer, these soils retain most of the characteristics of their sandy and loamy parent material.

Geology

Robert M. Crisler, geologist, Soil Conservation Service, helped prepare this section.

Geological formations in Conecuh County are sedimentary and range in age from Eocene to Recent. They consist mainly of sand, sandstone, silt, clay, and limestone. Geologic units in the county include, from oldest to youngest, the Nanfalia Formation, Tuscahoma Sand, and Hatchetigbee Formation (Wilcox Group); the Tallahatta Formation and Lisbon Formation (Claiborne Group); the Moodys Branch Formation, Yazoo Clay, and Ocala Limestone (Jackson Group) in the Eocene age; the Oligocene deposits undifferentiated; the Pliocene and Miocene deposits undifferentiated; residuum from Eocene to Pliocene age deposits; alluvial deposits of Pleistocene and Recent age; and terrace deposits of Pleistocene age *(13)*.

The Nanfalia Formation is the oldest geologic unit in Conecuh County. It is 250 feet thick at the surface, but only the upper few feet are exposed in the county.

Conecuh, Halso, and Luverne soils are dominant in the northern point of the county.

The Tuscahoma Sand overlies the Nanfalia Formation and crops out in the northern part of the county. The formation is 225 feet thick in the outcrops. Conecuh and Luverne soils are dominant.

The Hatchetigbee Formation overlies the Tuscahoma Sand and crops out in a belt across the northern part of the county. It is lithologically similar to the Tuscahoma Sand. The formation generally ranges from 60 to 200 feet thick. Conecuh and Luverne soils are dominant.

The Tallahatta Formation overlies the Hatchetigbee Formation and crops out in the northern and eastern parts of the county. This formation is about 50 feet thick in exposures within the county. Arundel soils are dominant.

The Lisbon Formation overlies the Tallahatta Formation and crops out in the northern, central, and eastern parts of the county. This formation is from 15 to 90 feet thick. Saffell, Troup, and Greenville soils are dominant.

The Moodys Branch Formation unconformably overlies the Lisbon Formation in the north-central, eastern, and southeastern parts of the county. This formation ranges from 5 to 65 feet thick. Saffell, Red Bay, and Greenville soils are dominant.

The Yazoo Clay overlies the Moodys Branch Formation and crops out in the northern, central, eastern, and southeastern parts of Conecuh County. The formation ranges from 5 to 50 feet thick along the outcrop. Troup, Orangeburg, and Saffell soils are dominant.

The Ocala Limestone unconformably overlies the Yazoo Clay and crops out in the southeastern part of the county. The formation ranges from 60 to 90 feet thick. Oktibbeha and Cadeville soils are dominant.

The Oligocene deposits unconformably overlie the Ocala Limestone and crop out in the south-central part of the county. The Red Bluff Clay, Marianna Limestone, Byram Formation, and Chickasawhey Limestone are in the county but are not differentiated because of the thin formations and limited fresh outcrops. In the outcrop, the Oligocene deposits generally range from 80 to 130 feet thick. Oktibbeha and Cadeville soils are dominant.

Pliocene and Miocene deposits unconformably overlie the Oligocene deposits and crop out in the southern part of the county. Pliocene and Miocene deposits are lithologically similar and are not separated on the geologic unit. The geologic unit is as much as 365 feet thick. Orangeburg, Saffell, and Malbis soils are dominant.

The residuum includes deposits ranging in age from Eocene to Pliocene that crop out in a belt trending southeastward across the central part of the county. This residuum is not a geologic formation in the strictest sense; it is a geologic unit or landscape type that can be mapped. The residuum is derived from beds of the Ocala Limestone, the Oligocene deposits, and the Pliocene and Miocene deposits. The beds are greatly disarranged and deeply weathered because of slumping. This slumping is the result of solution of underlying Ocala and Oligocene limestones. Greenville, Orangeburg, and Red Bay soils are dominant.

Alluvial deposits of the Pleistocene and Recent ages are in the larger stream valleys in the county. They overlie older geologic units and are generally 5 to 30 feet thick. Chrysler, Izagora, and Yonges soils are dominant. Bibb and Bigbee soils are dominant on flood plains in the county.

Some high terrace deposits of Pleistocene age are in the county but were included on the geologic unit with the Pliocene and Miocene deposits and with the residuum because of the lithological similarity with those units.

Survey Procedures

The general procedures followed in making this survey are described in the National Soils Handbook of the Soil Conservation Service. The Soil Survey of Conecuh County published in 1912 and the Generalized Geologic Map of Conecuh County, Alabama, *(13)* were among the references used.

Before the actual fieldwork began, preliminary boundaries of landforms were plotted stereoscopically on high altitude aerial photographs flown in 1976 at a scale of 1:80,000 and enlarged to a scale of 1:20,000. U.S. Geological Survey topographic maps at a scale of 1:24,000, photographs at the same scale and other scales, and soil surveys produced for conservation planning since 1912 were studied to relate land and image features. Reconnaissance by vehicle then was made before the surface was traversed and transected.

General soil map units 3, 4, and 8 were surveyed by a random transect method *(12)* and random observations made by truck on the existing roads and trails.

Traverses were made on foot and by truck in the rest of the survey area. Most of the traverses were made at intervals of about one-fourth mile. Traverses at closer intervals were made in areas of high variability. Some areas of high variability are in general soil map units 1 and 2.

Soil examinations along the traverses were made 100 and 400 yards apart, depending on the landscape and soil pattern *(12)*. Observations of such items as landforms, blown down trees, vegetation, roadbanks, and signs of animal and insect life were made continuously without regard to spacing. Soil boundaries were determined on the basis of landform position, soil examinations, observations, and photo interpretation. The soil material was examined with the aid of a spade, a hand auger, or a truck probe to a depth of about 5 feet or to bedrock if bedrock was at a depth of less than 5 feet. The typical pedons were observed and studied in pits that were dug by hand.

Samples for chemical and physical analyses and engineering test data were taken from the site of the typical pedon of most of the major soils in the survey area. The analyses were made by Auburn University, Auburn, Alabama, and by the State of Alabama Highway Department, Montgomery, Alabama. Some of the results of the analyses are published in this soil survey.

After completion of the soil mapping on high altitude aerial photographs, map unit delineations were transferred by hand to photo base sheets at a scale of 1:20,000. Surface drainage was mapped in the field. Cultural features and section corners were transferred from U.S. Geological Survey 7.5-minute topographic maps and were recorded from visual observations.

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Glossary

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels, i.e., clay coating, clay skin.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Cobblestone (or cobble). A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

Colluvium. Soil material, rock fragments, or both moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—
Loose.—Noncoherent when dry or moist; does not hold together in a mass.
Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.
Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.
Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.
Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.
Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.
Soft.—When dry, breaks into powder or individual grains under very slight pressure.
Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazingland for a prescribed period.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.
Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.
Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.
Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.
Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.
Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.
Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, such as fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay are in the soil. The soil is not a source of gravel or sand for construction purposes.

Fast intake (in tables). The movement of water into the soil is rapid.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fine textured soil. Sandy clay, silty clay, and clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant that is not a grass or a sedge.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.5 centimeters) in diameter.

Green-manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:
O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.
A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.
C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Arabic numeral 2 precedes the letter C.
R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The rock commonly underlies a C

horizon, but can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake in inches per hour is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments that are 3 inches (7.5 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Sandy loam and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and

many; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poor outlets (in tables). In these areas, surface or subsurface drainage outlets are difficult or expensive to install.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Residuum (residual soil material). Unconsolidated, weathered, or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rippable. Rippable bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 draw bar horsepower rating.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). There is a shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slippage (in tables). The soil mass is susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, such as zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). There is a risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of course grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. This contrasts with poorly graded soil.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Data recorded in the period 1961-80 at Evergreen, Alabama]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	58.3	34.9	46.6	79	9	135	6.39	3.85	8.66	8	.3
February---	61.8	35.3	48.6	82	16	102	5.32	2.84	7.48	7	.1
March------	70.6	43.9	57.3	86	25	250	7.07	3.71	10.01	8	.0
April------	78.6	51.8	65.2	91	34	456	5.36	1.83	8.26	6	.0
May--------	84.7	59.7	72.2	95	43	688	5.20	1.95	7.90	6	.0
June-------	89.7	66.5	78.1	100	55	843	5.93	2.79	8.62	8	.0
July-------	91.5	69.7	80.6	101	62	949	6.93	3.91	9.60	10	.0
August-----	90.9	69.1	80.0	98	61	930	4.43	2.05	6.47	8	.0
September--	87.7	65.1	76.4	97	49	792	4.98	2.37	7.22	6	.0
October----	79.5	52.0	65.8	91	33	490	2.61	0.31	4.33	4	.0
November---	69.3	42.9	56.1	84	24	204	4.09	2.47	5.52	6	.0
December---	61.6	36.5	49.1	81	16	130	6.15	4.04	8.07	7	.0
Yearly:											
Average--	77.0	52.3	64.7	---	---	---	---	---	---	---	---
Extreme--	---	---	---	102	9	---	---	---	---	---	---
Total----	---	---	---	---	---	5,969	64.46	50.58	77.56	84	.4

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 °F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Data recorded in the period 1961-80 at Evergreen, Alabama]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 11	March 18	April 2
2 years in 10 later than--	March 3	March 12	March 29
5 years in 10 later than--	February 16	February 28	March 20
First freezing temperature in fall:			
1 year in 10 earlier than--	November 16	November 2	October 30
2 years in 10 earlier than--	November 24	November 9	November 3
5 years in 10 earlier than--	December 8	November 22	November 11

TABLE 3.--GROWING SEASON

[Data recorded in the period 1961-80 at Evergreen, Alabama]

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	264	238	216
8 years in 10	274	248	223
5 years in 10	294	267	235
2 years in 10	314	286	247
1 year in 10	325	296	254

TABLE 4.--SUITABILITY AND LIMITATIONS OF MAP UNITS ON THE GENERAL SOIL MAP

Map unit	Extent of area	Cultivated crops	Pasture and hayland	Woodland	Urban uses	Intensiv recreati areas
	Pct					
1. Izagora-Chrysler-Cahaba	7	Good to fair: wetness, flooding.	Good	Good	Poor: flooding, wetness.	Fair: flooding, wetness.
2. Bibb-Bigbee-Yonges	3	Poor: flooding, wetness.	Fair to poor: flooding, wetness.	Fair: flooding.	Poor: flooding, wetness.	Poor: flooding, wetness.
3. Arundel	2	Poor: slope, depth to bedrock, too clayey.	Poor: slope.	Fair: slope.	Poor: slope, too clayey, stoniness.	Poor: slope.
4. Malbis-Gritney-Fuquay	15	Fair: slope.	Good	Good	Poor: percs slowly.	Fair: percs slo
5. Orangeburg-Troup-Greenville	45	Fair: slope.	Good	Good	Good	Good to fa slope.
6. Orangeburg-Troup	13	Fair: slope.	Good	Good	Good	Good to fa slope.
7. Luverne-Conecuh	5	Poor: too clayey.	Good	Good	Poor: low strength, shrink-swell, percs slowly.	Poor: too claye
8. Oktibbeha-Cadeville-Yonges	10	Poor: too clayey, wetness.	Good to fair: wetness.	Fair: too clayey, wetness.	Poor: low strength, shrink-swell, percs slowly, flooding.	Poor: too claye wetness.

TABLE 5.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
ArE	Arundel loamy fine sand, 4 to 25 percent slopes	9,583	1.8
AtA	Atmore fine sandy loam, 0 to 2 percent slopes	2,222	0.4
BbA	Bibb sandy loam, 0 to 1 percent slopes, frequently flooded	25,775	4.7
BgA	Bigbee sand, 0 to 1 percent slopes, rarely flooded	4,123	0.8
BoA	Bonneau loamy sand, 0 to 2 percent slopes	2,611	0.5
CaA	Cahaba sandy loam, 0 to 3 percent slopes, rarely flooded	394	0.1
CbA	Cahaba-Bigbee complex, 0 to 2 percent slopes, rarely flooded	10,897	2.0
ChA	Chrysler, occasionally flooded-Yonges, frequently flooded association, 0 to 2 percent slopes	12,409	2.3
CoC	Conecuh sandy loam, 2 to 8 percent slopes	6,258	1.1
CwC	Cowarts sandy loam, 2 to 8 percent slopes	1,047	0.2
FuB	Fuquay loamy sand, 0 to 5 percent slopes	7,331	1.3
GrA	Greenville sandy loam, 0 to 1 percent slopes	1,061	0.2
GrB	Greenville sandy loam, 1 to 5 percent slopes	55,369	10.1
GuC	Greenville-Urban land complex, 0 to 7 percent slopes	340	0.1
GyC	Gritney-Malbis-Fuquay complex, 1 to 8 percent slopes	31,929	5.8
HaC	Halso sandy loam, 2 to 8 percent slopes	640	0.1
IbA	Izagora, rarely flooded-Bethera, occasionally flooded association, 0 to 3 percent slopes	21,320	3.9
LuC	Luverne sandy loam, 2 to 8 percent slopes	8,536	1.6
LuD	Luverne sandy loam, 8 to 15 percent slopes	15,625	2.9
MaB	Malbis sandy loam, 1 to 6 percent slopes	23,156	4.2
OcC	Oktibbeha-Cadeville complex, 1 to 8 percent slopes	18,932	3.5
OsE	Oktibbeha-Saffell complex, 5 to 25 percent slopes	27,479	5.0
OrB	Orangeburg sandy loam, 1 to 6 percent slopes	76,595	14.0
OuC	Orangeburg-Urban land complex, 0 to 7 percent slopes	818	0.1
PITS	Pits	241	*
PoB	Poarch sandy loam, 0 to 5 percent slopes	9,805	1.8
RbB	Red Bay sandy loam, 1 to 5 percent slopes	2,968	0.6
TaC	Troup loamy sand, 2 to 8 percent slopes	19,748	3.6
TgD	Troup-Gritney-Saffell complex, 8 to 15 percent slopes	33,239	6.1
ToE	Troup-Orangeburg association, 8 to 25 percent slopes	106,719	19.5
YoA	Yonges loam, 0 to 1 percent slopes, frequently flooded	9,245	1.7
	Water	130	*
	Total	546,545	100.0

* Less than 0.1 percent.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Corn	Peanuts	Soybeans	Wheat	Improved bermudagrass hay	Cool-season annuals	Bahiagrass
		Bu	Lbs	Bu	Bu	Tons	AUM*	AUM*
ArE---------- Arundel	VIIe	---	---	---	---	---	---	---
AtA---------- Atmore	IVw	---	---	30	---	---	---	6.0
BbA---------- Bibb	Vw	---	---	---	---	---	---	---
BgA---------- Bigbee	IIIs	50	1,500	15	25	4.5	5.0	7.5
BoA---------- Bonneau	IIs	65	2,900	25	35	5.0	5.0	8.0
CaA---------- Cahaba	I	90	3,200	35	45	7.0	6.0	8.5
CbA:								
Cahaba---------	I	90	3,200	35	45	7.0	6.0	8.5
Bigbee---------	IIIs	50	1,500	15	25	4.5	5.0	7.5
ChA:								
Chrysler-------	IIw	100	---	45	35	6.0	5.0	10.0
Yonges---------	VIw	---	---	---	---	---	---	---
CoC---------- Conecuh	IVe	70	---	30	30	4.0	5.0	7.0
CwC---------- Cowarts	IIIe	75	2,200	25	30	5.0	5.5	7.0
FuB---------- Fuquay	IIs	65	2,900	25	35	5.5	5.0	8.5
GrA---------- Greenville	I	110	4,000	45	50	7.0	6.0	10.0
GrB---------- Greenville	IIe	100	3,800	40	45	7.0	6.0	10.0
GuC: Greenville- Urban land.								
GyC:								
Gritney--------	IVe	40	1,500	30	30	5.0	5.5	5.5
Malbis---------	IIIe	80	3,000	30	35	7.0	6.0	10.0
Fuquay---------	IIIs	60	2,300	20	30	5.5	5.0	5.5
HaC---------- Halso	IVe	65	---	25	25	4.0	5.0	5.5

See footnote at end of table.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Corn	Peanuts	Soybeans	Wheat	Improved bermudagrass hay	Cool-season annuals	Bahiagrass
		Bu	Lbs	Bu	Bu	Tons	AUM*	AUM*
IbA:								
Izagora	IIw	100	---	35	35	4.5	5.0	9.0
Bethera	IVw	---	---	30	---	---	---	7.0
LuC--Luverne	IVe	70	---	30	30	4.5	5.0	8.0
LuD--Luverne	VIe	---	---	---	---	4.0	5.0	7.0
MaB--Malbis	IIe	95	3,600	35	50	7.0	6.0	10.0
OcC:								
Oktibbeha	IVe	50	---	30	30	4.0	4.5	7.5
Cadeville	IVe	50	---	25	30	3.5	4.5	7.0
OsE:								
Oktibbeha	VIe	---	---	---	---	---	---	---
Saffell	VIe	---	---	---	---	---	---	---
OrB--Orangeburg	IIe	100	3,800	40	45	7.0	6.0	8.5
OuC: Orangeburg-Urban land.								
PITS. Pits								
PoB--Poarch	IIe	80	3,000	30	40	6.0	5.0	9.5
RbB--Red Bay	IIe	90	3,500	30	45	7.0	6.0	9.5
TaC--Troup	IVs	50	1,800	20	30	4.5	4.0	7.0
TgD:								
Troup	VIs	---	---	---	---	4.0	4.0	5.0
Gritney	VIe	---	---	---	---	4.5	4.0	4.5
Saffell	VIe	---	---	---	---	4.5	4.0	4.5
ToE:								
Troup	VIIs	---	---	---	---	---	---	---
Orangeburg	VIe	---	---	---	---	4.5	---	7.0
YoA--Yonges	VIw	---	---	---	---	---	---	8.0

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that in
available]

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity	
									cu/ft/a	
ArE Arundel	8C	Moderate	Moderate	Slight	Moderate	Moderate	Loblolly pine Shortleaf pine	85 75	120 ---	Lol
AtA Atmore	9W	Slight	Severe	Moderate	Slight	Severe	Loblolly pine Slash pine Longleaf pine Sweetgum	90 90 70 90	131 --- --- ---	Lol p
BbA Bibb	9W	Slight	Severe	Severe	Severe	Severe	Loblolly pine Sweetgum Water oak Blackgum	90 90 90 ---	131 --- --- ---	Lol o
BgA Bigbee	8S	Slight	Slight	Moderate	Slight	Slight	Loblolly pine Longleaf pine	80 75	110 ---	Lol l
BoA Bonneau	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine Longleaf pine	85 75	120 ---	Lol l
CaA Cahaba	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Slash pine Shortleaf pine Yellow poplar Sweetgum	90 80 70 100 ---	131 --- --- --- ---	Lol p
ChA: Cahaba	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Slash pine Shortleaf pine Yellow poplar Sweetgum	90 80 70 100 90	131 --- --- --- ---	Lol p
Bigbee	8S	Slight	Slight	Moderate	Slight	Slight	Loblolly pine Longleaf pine	80 75	110 ---	Lol l
ChA: Chrysler	11W	Slight	Moderate	Slight	Slight	Severe	Loblolly pine Shortleaf pine Slash pine Sweetgum Water oak Yellow poplar American sycamore	100 90 100 90 100 110 110	154 --- --- --- --- --- ---	Lol p o

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity	
									cu/ft/a	
ChA:										
Yonges	11W	Slight	Severe	Severe	Moderate	Severe	Loblolly pine	100	154	Lobl
							Sweetgum	100	---	pin
							Water oak	100	---	wat
CoC	9C	Slight	Moderate	Slight	Slight	Severe	Loblolly pine	90	131	Lobl
Conecuh							Water oak	90	---	oak
							Sweetgum	90	---	
							Shortleaf pine	80	---	
CwC	8A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	85	120	Lobl
Cowarts							Slash pine	85	---	lon
							Longleaf pine	70	---	pin
FuB	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	85	120	Lobl
Fuquay							Slash pine	85	---	pin
							Longleaf pine	70	---	
GrA, GrB	8A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	85	120	Lobl
Greenville							Longleaf pine	70	---	lon
							Slash pine	85	---	pin
							Shortleaf pine	80	---	
GyC:										
Gritney	8C	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	80	110	Slas
							Slash pine	80	---	pin
							Longleaf pine	70	---	
Malbis	10A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	95	142	Lobl
							Slash pine	95	---	pin
							Longleaf pine	85	---	
Fuquay	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	85	120	Slas
							Slash pine	85	---	pin
							Longleaf pine	70	---	
HaC	8C	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	85	---	Lobl
Halso							Slash pine	85	---	pin
							Shortleaf pine	70	---	
IbA:										
Izagora	9W	Slight	Moderate	Slight	Slight	Severe	Loblolly pine	90	131	Lobl
							Slash pine	90	---	pin
							Sweetgum	90	---	wat
							Yellow poplar	100	---	
							Water oak	90	---	

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity	
									cu/ft/a	
IbA:										
Bethera	9W	Slight	Severe	Severe	Moderate	Severe	Loblolly pine	90	131	Swee
							Sweetgum	90	---	pin
							Water oak	90	---	wat
LuC, LuD	9C	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	90	131	Lobl
Luverne							Shortleaf pine	80	---	lon
							Longleaf pine	75	---	
MaB	10A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	95	142	Lobl
Malbis							Slash pine	95	---	pin
							Longleaf pine	85	---	
OcC:										
Oktibbeha	9C	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine	90	131	Lobl
							Shortleaf pine	80	---	
Cadeville	8C	Slight	Severe	Moderate	Slight	Moderate	Loblolly pine	85	120	Lobl
							Shortleaf pine	75	---	
OsE:										
Oktibbeha	9C	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine	90	131	Lobl
							Shortleaf pine	80	---	
Saffell	6F	Moderate	Moderate	Moderate	Slight	Slight	Loblolly pine	70	93	Lobl
							Shortleaf pine	60	---	
OrB	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	90	131	Slas
Orangeburg							Slash pine	90	---	pin
							Longleaf pine	75	---	
PoB	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	90	131	Slas
Poarch							Slash pine	90	---	pin
							Longleaf pine	8	---	
RbB	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	90	131	Lobl
Red Bay							Slash pine	90	---	pin
							Longleaf pine	80	---	
TaC	8S	Slight	Slight	Moderate	Slight	Moderate	Loblolly pine	80	110	Lobl
Troup							Longleaf pine	70	---	lon
TgD:										
Troup	8S	Slight	Slight	Moderate	Slight	Moderate	Loblolly pine	80	110	Lobl
							Longleaf pine	74	---	lon
Gritney	8C	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	80	110	Slas
							Slash pine	80	---	pin
							Longleaf pine	70	---	

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity	
									cu/ft/a	
TqD:										
Saffell	6F	Moderate	Moderate	Moderate	Slight	Slight	Loblolly pine	70	93	Lobl
							Shortleaf pine	60	---	
ToE:										
Troup	8S	Moderate	Moderate	Moderate	Slight	Moderate	Loblolly pine	80	110	Lobl
							Longleaf pine	70	---	lon
Orangeburg	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	90	131	Slas
							Slash pine	90	---	pin
							Longleaf pine	75	---	
YoA	9W	Slight	Severe	Severe	Moderate	Severe	Loblolly pine	100	154	Lobl
Yonges							Sweetgum	100	---	pin
							Water oak	100	---	

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
ArE--- Arundel	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Moderate: slope.	Severe: slope.
AtA--- Atmore	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
BbA--- Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
BgA--- Bigbee	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
BoA--- Bonneau	Slight---	Slight---	Slight---	Slight---	Moderate: droughty.
CaA--- Cahaba	Severe: flooding.	Slight---	Slight---	Slight---	Slight.
CbA: Cahaba---	Severe: flooding.	Slight---	Slight---	Slight---	Slight.
Bigbee---	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
ChA: Chrysler---	Severe: flooding.	Moderate: wetness, percs slowly.	Moderate: wetness, flooding, percs slowly.	Moderate: wetness.	Moderate: wetness, flooding.
Yonges---	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
CoC--- Conecuh	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight---	Slight.
CwC--- Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight---	Slight.
FuB--- Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
GrA--- Greenville	Slight---	Slight---	Slight---	Slight---	Slight.
GrB--- Greenville	Slight---	Slight---	Moderate: slope.	Slight---	Slight.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
GuC:					
Greenville	Slight	Slight	Moderate: slope.	Slight	Slight.
Urban land.					
GyC:					
Gritney	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
Malbis	Slight	Slight	Moderate: slope.	Slight	Slight.
Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
HaC Halso	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight	Slight.
IbA:					
Izagora	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Severe: erodes easily.	Moderate: flooding.
Bethera	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
LuC Luverne	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
LuD Luverne	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
MaB Malbis	Slight	Slight	Moderate: slope.	Slight	Slight.
OcC:					
Oktibbeha	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly, slope.	Slight	Slight.
Cadeville	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly, slope.	Severe: erodes easily.	Slight.
OsE:					
Oktibbeha	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Slight	Moderate: slope.
Saffell	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
OrB Orangeburg	Slight	Slight	Moderate: slope.	Slight	Slight.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
OuC: Orangeburg	Slight	Slight	Moderate: slope.	Slight	Slight.
Urban land.					
PITS. Pits					
PoB--- Poarch	Slight	Slight	Moderate: slope.	Slight	Slight.
RbB--- Red Bay	Slight	Slight	Moderate: slope.	Slight	Slight.
TaC--- Troup	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
TgD: Troup	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: droughty, slope.
Gritney	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
Saffell	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight	Moderate: droughty, slope.
ToE: Troup	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Orangeburg	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
YoA--- Yonges	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
ArE---- Arundel	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
AtA---- Atmore	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
BbA---- Bibb	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
BgA---- Bigbee	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Poor	Very poor.
BoA---- Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
CaA---- Cahaba	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CbA:										
Cahaba----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Bigbee----	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Poor	Very poor.
ChA:										
Chrysler----	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Yonges----	Poor	Fair	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.
CoC---- Conecuh	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CwC---- Cowarts	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FuB---- Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
GrA, GrB---- Greenville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GuC:										
Greenville----	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Urban land.										
GyC:										
Gritney----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Malbis----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
GyC: Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
HaC: Halso	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
IbA: Izagora	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Bethera	Very poor.	Very poor.	Very poor.	Fair	Fair	Good	Good	Very poor.	Poor	Good.
LuC, LuD: Luverne	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MaB: Malbis	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OcC: Oktibbeha	Fair	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Poor.
Cadeville	Fair	Good	Good	Poor	Good	Poor	Very poor.	Good	Good	Very poor.
OsE: Oktibbeha	Fair	Fair	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Saffell	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
OrB: Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OuC: Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Urban land.										
PITS. Pits										
PoB: Poarch	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
RbB: Red Bay	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
TaC: Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
TgD: Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Gritney	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
TgD: Saffell	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
ToE: Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Orangeburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
YoA Yonges	Poor	Fair	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
ArE---- Arundel	Severe: depth to rock, too clayey, slope.	Severe: shrink-swell, slope.	Severe: shrink-swell, slope.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope, depth to rock.
AtA---- Atmore	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
BbA---- Bibb	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
BgA---- Bigbee	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty, too sandy.
BoA---- Bonneau	Severe: cutbanks cave.	Slight----	Moderate: wetness.	Slight----	Slight----	Moderate: droughty.
CaA---- Cahaba	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
CbA:						
Cahaba----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
Bigbee----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty, too sandy.
ChA:						
Chrysler----	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Moderate: wetness, flooding.
Yonges----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
CoC---- Conecuh	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
CwC---- Cowarts	Slight----	Slight----	Slight----	Moderate: slope.	Slight----	Slight.
FuB---- Fuquay	Slight----	Slight----	Moderate: wetness.	Slight----	Slight----	Moderate: droughty.
GrA, GrB---- Greenville	Moderate: too clayey.	Slight----	Slight----	Slight----	Moderate: low strength.	Slight.
GuC:						
Greenville----	Moderate: too clayey.	Slight----	Slight----	Slight----	Moderate: low strength.	Slight.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
GuC: Urban land.						
GyC: Gritney	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Malbis	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
Fuquay	Slight	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
HaC: Halso	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
IbA: Izagora	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Moderate: flooding.
Bethera	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
LuC: Luverne	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
LuD: Luverne	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
MaB: Malbis	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.
OcC: Oktibbeha	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Cadeville	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
OsE: Oktibbeha	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
Saffell	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
OrB: Orangeburg	Slight	Slight	Slight	Slight	Slight	Slight.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
OuC: Orangeburg	Slight	Slight	Slight	Slight	Slight	Slight.
Urban land.						
PITS. Pits						
PoB--- Poarch	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.
RbB--- Red Bay	Slight	Slight	Slight	Slight	Slight	Slight.
TaC--- Troup	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
TgD: Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Gritney	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
Saffell	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
ToE: Troup	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Orangeburg	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
YoA--- Yonges	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ArE---- Arundel	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey, slope.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
AtA---- Atmore	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
BbA---- Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
BgA---- Bigbee	Severe: wetness, poor filter.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
BoA---- Bonneau	Severe: wetness.	Severe: seepage.	Severe: wetness.	Severe: seepage.	Good.
CaA---- Cahaba	Moderate: flooding.	Severe: seepage.	Severe: seepage.	Moderate: flooding.	Fair: thin layer.
CbA:					
Cahaba----	Moderate: flooding.	Severe: seepage.	Severe: seepage.	Moderate: flooding.	Fair: thin layer.
Bigbee----	Severe: wetness, poor filter.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
ChA:					
Chrysler----	Severe: flooding, wetness, percs slowly.	Slight----	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack.
Yonges----	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
CoC---- Conecuh	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----	Poor: too clayey, hard to pack.
CwC---- Cowarts	Severe: percs slowly.	Moderate: slope.	Slight----	Slight----	Good.
FuB---- Fuquay	Moderate: percs slowly.	Moderate: slope.	Slight----	Slight----	Fair: too sandy.
GrA---- Greenville	Moderate: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight----	Fair: too clayey.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
GrB---------- Greenville	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
GuC: Greenville---------	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
Urban land.					
GyC: Gritney----------	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
Malbis----------	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
Fuquay----------	Moderate: percs slowly.	Moderate: slope.	Slight----------	Slight----------	Fair: too sandy.
HaC---------- Halso	Severe: percs slowly.	Moderate: depth to rock, slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock.	Poor: too clayey, hard to pack.
IbA: Izagora----------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, seepage, wetness.	Fair: too clayey, wetness, thin layer.
Bethera----------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
LuC---------- Luverne	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.
LuD---------- Luverne	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
MaB---------- Malbis	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
OcC: Oktibbeha----------	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.
Cadeville----------	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
OsE:					
Oktibbeha	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Saffell	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: small stones, slope.
OrB--- Orangeburg	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
OuC:					
Orangeburg	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
Urban land.					
PITS.					
Pits					
PoB--- Poarch	Severe: wetness, percs slowly.	Moderate: slope, seepage.	Severe: wetness.	Moderate: wetness.	Fair: wetness.
RbB--- Red Bay	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
TaC--- Troup	Slight	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: seepage.
TgD:					
Troup	Moderate: slope.	Severe: seepage, slope.	Moderate: slope, too sandy.	Severe: seepage.	Poor: seepage.
Gritney	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
Saffell	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Poor: small stones.
ToE:					
Troup	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: seepage, slope.	Poor: seepage, slope.
Orangeburg	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
YoA--- Yonges	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
ArE--- Arundel	Poor: area reclaim, low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
AtA--- Atmore	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
BbA--- Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
BgA--- Bigbee	Good---	Probable---	Improbable: too sandy.	Poor: too sandy.
BoA--- Bonneau	Good---	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
CaA--- Cahaba	Good---	Improbable: excess fines.	Improbable: too sandy.	Good.
CbA: Cahaba---	Good---	Improbable: excess fines.	Improbable: too sandy.	Good.
Bigbee---	Good---	Probable---	Improbable: too sandy.	Poor: too sandy.
ChA: Chrysler---	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Yonges---	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
CoC--- Conecuh	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
CwC--- Cowarts	Good---	Improbable: excess fines.	Improbable: excess fines.	Good.
FuB--- Fuquay	Good---	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
GrA, GrB--- Greenville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
GuC: Greenville---	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Urban land.				

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
GyC:				
Gritney	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Malbis	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Fuquay	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
HaC	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
Halso				
IbA:				
Izagora	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Bethera	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
LuC, LuD	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Luverne				
MaB	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Malbis				
OcC:				
Oktibbeha	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, thin layer.
Cadeville	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
OsE:				
Oktibbeha	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, thin layer.
Saffell	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
OrB	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Orangeburg				
OuC:				
Orangeburg	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Urban land.				
PITS.				
Pits				

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
PoB---------- Poarch	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
RbB---------- Red Bay	Good----------	Improbable: excess fines.	Improbable: excess fines.	Good.
TaC---------- Troup	Good----------	Probable----------	Improbable: too sandy.	Fair: too sandy.
TgD: Troup----------	Good----------	Probable----------	Improbable: too sandy.	Fair: too sandy, slope.
Gritney----------	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Saffell----------	Good----------	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
ToE: Troup----------	Fair: slope.	Probable----------	Improbable: too sandy.	Poor: slope.
Orangeburg----------	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
YoA---------- Yonges	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
ArE---- Arundel	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, fast intake, percs slowly.	Slope, depth to rock.	Slope, depth to rock.
AtA---- Atmore	Moderate: seepage.	Severe: piping, wetness.	Favorable----	Wetness----	Erodes easily, wetness.	Wetness, erodes easily.
BbA---- Bibb	Severe: seepage.	Severe: piping, wetness.	Flooding----	Wetness, flooding.	Erodes easily, wetness.	Erodes easily, wetness.
BgA---- Bigbee	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy----	Droughty.
BoA---- Bonneau	Severe: seepage.	Severe: thin layer.	Deep to water	Droughty, fast intake, soil blowing.	Soil blowing---	Droughty.
CaA---- Cahaba	Severe: seepage.	Moderate: thin layer, piping.	Deep to water	Favorable----	Favorable----	Favorable.
CbA:						
Cahaba----	Severe: seepage.	Moderate: thin layer, piping.	Deep to water	Favorable----	Favorable----	Favorable.
Bigbee----	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy----	Droughty.
ChA:						
Chrysler----	Slight----	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
Yonges----	Moderate: seepage.	Severe: piping, wetness.	Flooding----	Wetness, flooding.	Wetness----	Wetness.
CoC---- Conecuh	Moderate: slope.	Severe: hard to pack.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
CwC---- Cowarts	Moderate: slope.	Moderate: piping.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
FuB---- Fuquay	Slight----	Slight----	Deep to water	Droughty, fast intake.	Too sandy----	Droughty.
GrA---- Greenville	Moderate: seepage.	Moderate: piping.	Deep to water	Favorable----	Favorable----	Favorable.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
GrB---------- Greenville	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope----------	Favorable------	Favorable.
GuC: Greenville-------	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope----------	Favorable------	Favorable.
Urban land.						
GyC: Gritney----------	Slight---------	Moderate: hard to pack.	Deep to water	Percs slowly, slope, soil blowing.	Percs slowly, erodes easily, soil blowing.	Erodes easily, percs slowly.
Malbis----------	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Favorable------	Favorable.
Fuquay----------	Slight---------	Slight---------	Deep to water	Droughty, fast intake, slope.	Too sandy------	Droughty.
HaC---------- Halso	Moderate: depth to rock, slope.	Severe: hard to pack.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
IbA: Izagora----------	Moderate: seepage.	Moderate: piping, wetness.	Flooding-------	Wetness, percs slowly, flooding.	Erodes easily, wetness.	Erodes easily.
Bethera----------	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.
LuC---------- Luverne	Moderate: slope.	Severe: piping, hard to pack.	Deep to water	Slope----------	Favorable------	Favorable.
LuD---------- Luverne	Severe: slope.	Severe: piping, hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
MaB---------- Malbis	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Favorable------	Favorable.
OcC: Oktibbeha--------	Moderate: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
Cadeville--------	Moderate: slope.	Moderate: piping, hard to pack.	Deep to water	Percs slowly, slope, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
OsE: Oktibbeha--------	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
OsE: Saffell	Severe: seepage.	Slight	Deep to water	Droughty, fast intake, slope.	Slope	Slope, droughty.
OrB: Orangeburg	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope	Favorable	Favorable.
OuC: Orangeburg	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope	Favorable	Favorable.
Urban land.						
PITS. Pits						
PoB: Poarch	Moderate: seepage.	Severe: piping.	Favorable	Wetness	Wetness	Favorable.
RbB: Red Bay	Moderate: seepage, slope.	Slight	Deep to water	Slope	Favorable	Favorable.
TaC: Troup	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Too sandy	Droughty.
TgD: Troup	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy.	Slope, droughty.
Gritney	Slight	Moderate: hard to pack.	Deep to water	Percs slowly, slope, soil blowing.	Slope, erodes easily, soil blowing.	Slope, erodes easily, percs slowly.
Saffell	Severe: seepage.	Slight	Deep to water	Droughty, fast intake, slope.	Slope	Slope, droughty.
ToE: Troup	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy.	Slope, droughty.
Orangeburg	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
YoA: Yonges	Moderate: seepage.	Severe: piping, wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated. Some soils may have Unified classifications and USDA textures in addition to those shown. In general, the dominant classifications and textures are shown]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
ArE----------	0-7	Loamy fine sand	SM	A-2, A-4	0-6	85-100	80-95	60-90	19-45	---	NP
Arundel	7-24	Clay loam, silty clay, clay.	CL, CH, MH	A-7	0-15	85-100	80-100	80-100	65-90	44-70	22-41
	24-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
AtA----------	0-14	Fine sandy loam	SM, ML, CL-ML, SM-SC	A-4	0	90-100	90-100	75-90	40-70	<25	NP-7
Atmore	14-38	Loam, fine sandy loam.	ML, CL-ML	A-4	0	80-100	80-100	80-96	55-80	<25	NP-7
	38-62	Loam, clay loam	ML, CL, SM, SC	A-4, A-6	0	78-100	75-100	70-96	40-70	20-40	2-18
BbA----------	0-32	Sandy loam-------	SM, SM-SC, ML, CL-ML	A-2, A-4	0	95-100	90-100	60-90	30-60	<25	NP-7
Bibb	32-60	Loamy sand, loam, silt loam.	SM, SM-SC, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
BgA----------	0-6	Sand----------	SM, SP-SM	A-2-4, A-3	0	100	95-100	50-75	5-20	---	NP
Bigbee	6-80	Sand, fine sand	SP-SM, SM	A-2-4, A-3	0	85-100	85-100	50-75	5-20	---	NP
BoA----------	0-28	Loamy sand, loamy fine sand.	SM	A-2	0	100	100	50-95	15-35	---	NP
Bonneau	28-43	Sandy loam, sandy clay loam, fine sandy loam.	SC, SM-SC	A-2, A-6, A-4	0	100	100	60-100	30-50	21-40	4-21
	43-72	Sandy loam, sandy clay loam, sandy clay.	CL, SC, SM-SC, CL-ML	A-4, A-6, A-2	0	100	100	60-95	25-60	20-40	4-18
CaA----------	0-14	Sandy loam-------	SM	A-4, A-2-4	0	95-100	95-100	65-90	30-45	---	NP
Cahaba	14-37	Sandy clay loam, loam, sandy loam.	SC, CL	A-4, A-6	0	90-100	80-100	75-90	40-75	22-35	8-15
	37-72	Sand, loamy sand, sandy loam.	SM, SP-SM	A-2-4	0	95-100	90-100	60-85	10-35	---	NP
CbA:											
Cahaba----------	0-12	Sandy loam-------	SM	A-4, A-2-4	0	95-100	95-100	65-90	30-45	---	NP
	12-37	Sandy clay loam, loam, sandy loam.	SC, CL	A-4, A-6	0	90-100	80-100	75-90	40-75	22-35	8-15
	37-80	Sand, loamy sand, sandy loam.	SM, SP-SM	A-2-4	0	95-100	90-100	60-85	10-35	---	NP
Bigbee----------	0-6	Sand----------	SM, SP-SM	A-2-4, A-3	0	100	95-100	50-75	5-20	---	NP
	6-80	Sand, fine sand	SP-SM, SM	A-2-4, A-3	0	85-100	85-100	50-75	5-20	---	NP

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
ChA:											
Chrysler--------	0-6	Fine sandy loam	SM, ML	A-4	0	95-100	95-100	70-100	40-75	<30	NP-7
	6-72	Silty clay loam, silty clay, clay.	CL, ML, CH, MH	A-7	0	95-100	95-100	90-100	85-100	45-70	15-35
	72-90	Variable---------	---	---	---	---	---	---	---	---	---
Yonges----------	0-7	Loam, sandy loam	CL-ML, CL, ML	A-4, A-6	0	100	100	90-100	60-90	20-35	3-15
	7-57	Sandy clay loam, clay loam, sandy clay.	CL-ML, CL, SC, SM-SC	A-4, A-6, A-7	0	100	100	95-100	40-70	20-45	6-28
	57-90	Variable---------	---	---	---	---	---	---	---	---	---
CoC--------------	0-3	Sandy loam-------	SM, ML	A-4	0	95-100	95-100	70-100	40-70	<20	NP
Conecuh	3-50	Clay, silty clay	ML, MH	A-7	0	95-100	95-100	90-100	70-98	45-75	15-35
	50-72	Variable---------	---	---	---	---	---	---	---	---	---
CwC--------------	0-11	Sandy loam-------	SM, SM-SC	A-2, A-4	0	95-100	90-100	75-90	20-40	<20	NP-5
Cowarts	11-18	Clay loam, sandy clay loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	90-100	60-90	23-45	20-40	NP-15
	18-25	Sandy clay loam, sandy clay, clay loam.	SM-SC, SM, SC, CL	A-6, A-7	0	95-100	90-100	60-90	25-50	30-54	11-23
	25-60	Sandy loam, sandy clay, clay loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	85-100	80-100	60-95	30-58	25-53	5-20
FuB--------------	0-29	Loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	---	NP
Fuquay	29-35	Sandy loam-------	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	70-90	23-45	<25	NP-13
	35-75	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML	A-2, A-4, A-6, A-7-6	0	95-100	90-100	58-90	28-49	20-49	4-12
GrA, GrB---------	0-9	Sandy loam-------	SM, SC, SM-SC, CL-ML	A-2, A-4	0	95-100	90-100	65-85	25-55	<25	NP-10
Greenville	9-80	Sandy clay, clay loam, clay.	CL, SC, ML	A-6, A-7, A-4	0	98-100	95-100	80-95	40-80	28-50	7-25
GuC:											
Greenville------	0-9	Sandy loam-------	SM, SC, SM-SC, CL-ML	A-2, A-4	0	95-100	90-100	65-85	25-55	<25	NP-10
	9-80	Sandy clay, clay loam, clay.	CL, SC, ML	A-6, A-7, A-4	0	98-100	95-100	80-95	40-80	28-50	7-25
Urban land.											
GyC:											
Gritney---------	0-11	Sandy loam-------	SM, SM-SC	A-2-4, A-4	0	100	95-100	75-99	18-42	<30	NP-6
	11-20	Sandy clay loam, sandy clay, clay loam.	SC, CL	A-6, A-7	0	100	95-100	80-100	36-60	35-48	15-25
	20-53	Sandy clay, clay, clay loam.	CH, CL, SC	A-7	0	100	95-100	80-100	45-70	44-62	22-40
	53-67	Sandy clay loam	CH, CL, SC	A-7	0	100	95-100	80-100	40-55	40-55	20-35

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
GyC:											
Malbis----------	0-6	Sandy loam-------	SM, ML	A-4	0	99-100	97-100	85-97	40-62	<30	NP-5
	6-28	Loam, sandy clay loam, clay loam.	CL-ML, CL	A-4, A-6	0	99-100	95-100	80-100	55-70	21-35	5-11
	28-37	Sandy clay loam, clay loam, loam.	ML, CL	A-4, A-6, A-7	0	98-100	96-100	90-100	56-80	29-49	4-15
	37-72	Sandy clay loam, clay loam.	ML, CL	A-4, A-5, A-6, A-7	0	98-100	96-100	90-100	56-80	30-49	4-15
Fuquay----------	0-29	Loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	---	NP
	29-35	Sandy loam-------	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	70-90	23-45	<25	NP-13
	35-75	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML	A-2, A-4, A-6, A-7-6	0	95-100	90-100	58-90	28-49	20-49	4-12
HaC----------	0-5	Sandy loam-------	SM, ML	A-4	0	95-100	95-100	70-100	40-70	<20	NP
Halso	5-41	Clay------------	ML, MH	A-7	0	95-100	95-100	90-100	80-98	45-70	15-35
	41-48	Variable---------	---	---	---	---	---	---	---	---	---
	48-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
IbA:											
Izagora---------	0-8	Loam, fine sandy loam.	CL, CL-ML, ML	A-4	0	95-100	95-100	85-100	60-90	<30	NP-10
	8-33	Loam, clay loam	CL	A-4, A-6, A-7	0	95-100	95-100	85-100	60-95	25-45	8-25
	33-80	Clay loam, clay	CL, CH	A-6, A-7	0	95-100	95-100	90-100	70-95	35-60	20-40
Bethera---------	0-6	Fine sandy loam	SM, ML, SM-SC, CL-ML	A-4	0	100	98-100	70-85	40-55	<26	NP-6
	6-62	Clay, clay loam, sandy clay loam.	CL, CH, ML, MH	A-6, A-7	0	100	98-100	93-100	55-95	37-55	12-30
LuC, LuD---------	0-6	Sandy loam-------	ML, SM	A-4, A-2	0-5	87-100	84-100	80-100	30-60	<20	NP
Luverne	6-28	Clay loam, clay	ML, MH	A-5, A-7, A-4	0-5	95-100	90-100	85-100	50-95	38-70	8-30
	28-65	Variable---------	---	---	---	---	---	---	---	---	---
MaB----------	0-6	Sandy loam-------	SM, ML	A-4	0	99-100	97-100	85-97	40-62	<30	NP-5
Malbis	6-28	Loam, sandy clay loam, clay loam.	CL-ML, CL	A-4, A-6	0	99-100	95-100	80-100	55-70	21-35	5-11
	28-37	Sandy clay loam, clay loam, loam.	ML, CL	A-4, A-6, A-7	0	98-100	96-100	90-100	56-80	29-49	4-15
	37-72	Sandy clay loam, clay loam.	ML, CL	A-4, A-5, A-6, A-7	0	98-100	96-100	90-100	56-80	30-49	4-15
OcC:											
Oktibbeha-------	0-3	Clay loam--------	CL	A-6, A-7	0	95-100	95-100	80-100	70-95	32-50	12-28
	3-36	Clay------------	CH	A-7	0	95-100	95-100	80-100	70-100	55-110	30-65
	36-60	Clay, silty clay	CL, CH	A-7	0-5	95-100	90-100	90-100	90-100	41-115	25-65
Cadeville-------	0-4	Fine sandy loam	ML, CL, CL-ML	A-4, A-6	0	100	100	85-95	60-75	20-38	2-19
	4-40	Silty clay, clay	CH, CL	A-7-6	0	100	100	95-100	80-95	41-60	22-35
	40-72	Clay, silty clay, silty clay loam.	CH, CL	A-7-6, A-6	0	100	100	95-100	75-95	30-55	12-30

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
OsE:											
Oktibbeha-------	0-3	Clay loam--------	CL	A-6, A-7	0	95-100	95-100	80-100	70-95	32-50	12-28
	3-36	Clay-------------	CH	A-7	0	95-100	95-100	80-100	70-100	55-110	30-65
	36-60	Clay, silty clay	CL, CH	A-7	0-5	95-100	90-100	90-100	90-100	41-115	25-65
Saffell---------	0-5	Gravelly loamy fine sand.	SM	A-1, A-2, A-4	0-5	70-80	50-75	40-65	20-40	<20	NP-3
	5-28	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam.	GC, SC, SM-SC, GM-GC	A-2, A-1	0-15	35-85	25-70	20-55	15-35	20-40	4-18
	28-43	Very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loamy sand.	GC, SC, SM-SC, GM-GC	A-2, A-1	0-15	35-85	25-65	20-55	15-35	20-40	4-18
	43-60	Very gravelly loamy sand, extremely gravelly loamy sand.	GM, GC, SM, SC	A-1, A-2, A-3	0-5	25-80	10-70	5-60	5-35	<35	NP-15
OrB----------	0-6	Sandy loam-------	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
Orangeburg	6-12	Sandy loam, fine sandy loam.	SM	A-2	0	98-100	95-100	70-96	25-35	<30	NP-4
	12-72	Sandy clay loam	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	3-19
OuC:											
Orangeburg------	0-6	Sandy loam-------	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
	6-12	Sandy loam, fine sandy loam.	SM	A-2	0	98-100	95-100	70-96	25-35	<30	NP-4
	12-72	Sandy clay loam	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	3-19
Urban land.											
PITS.											
Pits											
PoB----------	0-8	Sandy loam-------	SM, SM-SC	A-4, A-2-4	0	95-100	95-100	70-95	30-50	<25	NP-5
Poarch	8-44	Loam, fine sandy loam, sandy loam.	ML, CL-ML, CL	A-4	0	95-100	95-100	85-95	51-75	20-30	NP-10
	44-72	Loam, sandy loam, sandy clay loam.	ML, CL, CL-ML	A-4	0	85-100	85-100	85-95	51-75	20-30	2-10
RbB----------	0-5	Sandy loam-------	SM, SM-SC	A-2, A-4	0	100	95-100	60-85	15-45	<20	NP-4
Red Bay	5-9	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4	0	100	95-100	60-85	15-50	<35	NP-10
	9-80	Sandy clay loam, clay loam.	SM-SC, SC	A-2, A-4, A-6	0	100	95-100	70-90	24-50	18-40	4-16

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
TaC----------	0-62	Loamy sand-------	SM, SP-SM	A-2, A-4	0	95-100	90-100	50-90	10-40	---	NP
Troup	62-92	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2, A-6	0	95-100	90-100	60-90	24-55	19-40	4-20
TgD:											
Troup----------	0-62	Loamy sand-------	SM, SP-SM	A-2, A-4	0	95-100	90-100	50-90	10-40	---	NP
	62-92	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2, A-6	0	95-100	90-100	60-90	24-55	19-40	4-20
Gritney---------	0-11	Sandy loam-------	SM, SM-SC	A-2-4, A-4	0	100	95-100	75-99	18-42	<30	NP-6
	11-20	Sandy clay loam, sandy clay, clay loam.	SC, CL	A-6, A-7	0	100	95-100	80-100	36-60	35-48	15-25
	20-53	Sandy clay, clay, clay loam.	CH, CL, SC	A-7	0	100	95-100	80-100	45-70	44-62	22-40
	53-72	Sandy clay loam	CH, CL, SC	A-7	0	100	95-100	80-100	40-55	40-55	20-35
Saffell---------	0-5	Gravelly loamy fine sand.	SM	A-1, A-2, A-4	0-5	70-80	50-75	40-65	20-40	<20	NP-3
	5-28	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam.	GC, SC, SM-SC, GM-GC	A-2, A-1	0-15	35-85	25-70	20-55	15-35	20-40	4-18
	28-43	Very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loamy sand.	GC, SC, SM-SC, GM-GC	A-2, A-1	0-15	35-85	25-65	20-55	15-35	20-40	4-18
	43-60	Very gravelly loamy sand, extremely gravelly loamy sand.	GM, GC, SM, SC	A-1, A-2, A-3	0-5	25-80	10-70	5-60	5-35	<35	NP-15
ToE:											
Troup----------	0-62	Loamy sand-------	SM, SP-SM	A-2, A-4	0	95-100	90-100	50-90	10-40	---	NP
	62-92	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2, A-6	0	95-100	90-100	60-90	24-55	19-40	4-20
Orangeburg------	0-6	Sandy loam-------	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
	6-12	Sandy loam, fine sandy loam.	SM	A-2	0	98-100	95-100	70-96	25-35	<30	NP-4
	12-72	Sandy clay loam	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	3-19
YoA----------	0-7	Loam, sandy loam	CL-ML, CL, ML	A-4, A-6	0	100	100	90-100	60-90	20-35	3-15
Yonges	7-57	Sandy clay loam, clay loam, sandy loam.	CL-ML, CL, SC, SM-SC	A-4, A-6, A-7	0	100	100	95-100	40-70	20-45	6-28
	57-90	Variable---------	---	---	---	---	---	---	---	---	---

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
ArE----------	0-7	2-12	1.40-1.70	2.0-6.0	0.06-0.12	3.6-6.0	Low----------	0.28	3	.5-1
Arundel	7-24	35-78	1.55-1.65	<0.06	0.12-0.18	3.6-4.4	High----------	0.32		
	24-60	---	---	---	---	---	----------	----		
AtA----------	0-14	2-12	1.35-1.65	0.6-2.0	0.12-0.20	3.6-5.5	Low----------	0.32	3	.5-3
Atmore	14-38	6-18	1.35-1.60	0.6-2.0	0.16-0.24	3.6-5.5	Low----------	0.37		
	38-62	15-40	1.45-1.65	0.2-0.6	0.18-0.22	3.6-5.5	Low----------	0.32		
BbA----------	0-32	2-18	1.25-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.20	5	.5-2
Bibb	32-60	2-18	1.30-1.60	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.37		
BgA----------	0-6	1-10	1.40-1.50	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5	.5-2
Bigbee	6-80	1-10	1.40-1.50	6.0-20	0.05-0.08	4.5-6.0	Low----------	0.17		
BoA----------	0-28	5-15	1.30-1.70	6.0-20	0.05-0.11	4.5-6.0	Low----------	0.15	5	.5-2
Bonneau	28-43	18-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
	43-72	15-40	1.40-1.60	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.20		
CaA----------	0-14	7-17	1.35-1.60	2.0-6.0	0.10-0.14	4.5-6.0	Low----------	0.24	5	.5-2
Cahaba	14-37	18-35	1.35-1.60	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.28		
	37-72	4-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low----------	0.24		
CbA:										
Cahaba----------	0-12	7-17	1.35-1.60	2.0-6.0	0.10-0.14	4.5-6.0	Low----------	0.24	5	.5-2
	12-37	18-35	1.35-1.60	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.28		
	37-80	4-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low----------	0.24		
Bigbee----------	0-6	1-10	1.40-1.50	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5	.5-2
	6-80	1-10	1.40-1.50	6.0-20	0.05-0.08	4.5-6.0	Low----------	0.17		
ChA:										
Chrysler--------	0-6	10-20	1.35-1.55	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.28	5	.5-2
	6-72	35-60	1.20-1.50	0.06-0.2	0.14-0.18	4.5-5.5	Moderate-----	0.32		
	72-90	10-40	1.35-1.65	0.2-0.6	0.14-0.18	4.5-5.5	Low----------	0.32		
Yonges----------	0-7	10-27	1.30-1.60	0.6-2.0	0.15-0.20	5.1-7.3	Low----------	0.28	5	1-5
	7-57	18-35	1.30-1.60	0.2-0.6	0.13-0.18	5.1-7.3	Low----------	0.17		
	57-90	10-35	1.30-1.50	0.6-2.0	0.12-0.16	6.1-8.4	Low----------	0.20		
CoC----------	0-3	7-20	1.30-1.60	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.28	4	.5-2
Conecuh	3-50	45-70	1.10-1.40	<0.06	0.12-0.18	3.6-5.5	High----------	0.32		
	50-72	---	---	---	---	---	----------	----		
CwC----------	0-11	5-20	1.30-1.65	2.0-6.0	0.08-0.13	4.5-5.5	Low----------	0.24	3	<1
Cowarts	11-18	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	18-25	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	25-60	18-35	1.45-1.75	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24		
FuB----------	0-29	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.0	Low----------	0.15	5	.5-2
Fuquay	29-35	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.20		
	35-75	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	Low----------	0.20		
GrA, GrB---------	0-9	5-20	1.30-1.65	0.6-6.0	0.07-0.14	4.5-6.0	Low----------	0.24	5	.5-1
Greenville	9-80	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-6.0	Low----------	0.17		

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
GuC:										
Greenville------	0-9	5-20	1.30-1.65	0.6-6.0	0.07-0.14	4.5-6.0	Low----------	0.24	5	.5-1
	9-80	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-6.0	Low----------	0.17		
Urban land.										
GyC:										
Gritney---------	0-11	8-30	1.50-1.60	6.0-20	0.10-0.15	4.5-5.5	Low----------	0.24	3	1-4
	11-20	30-45	1.55-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Moderate-----	0.32		
	20-53	35-60	1.55-1.70	0.06-0.2	0.10-0.15	4.5-5.5	High---------	0.32		
	53-67	20-35	1.50-1.65	0.2-0.6	0.10-0.15	4.5-5.5	High---------	0.28		
Malbis----------	0-6	10-25	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	.5-1
	6-28	18-33	1.30-1.70	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.28		
	28-37	20-35	1.40-1.60	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28		
	37-72	20-35	1.45-1.70	0.2-0.6	0.06-0.12	4.5-5.5	Low----------	0.28		
Fuquay----------	0-29	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.0	Low----------	0.15	5	.5-2
	29-35	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.20		
	35-75	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	Low----------	0.20		
HaC--------------	0-5	7-20	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	Low----------	0.28	3	.5-2
Halso	5-41	45-70	1.10-1.40	<0.06	0.12-0.18	3.6-5.5	High---------	0.32		
	41-48	25-50	1.30-1.65	<0.06	0.04-0.08	3.6-5.5	Moderate-----	0.24		
	48-60	---	---	---	---	---	----------	----		
IbA:										
Izagora---------	0-8	10-20	1.40-1.60	2.0-6.0	0.16-0.22	3.6-6.0	Low----------	0.37	3	.5-2
	8-33	18-30	1.40-1.60	0.6-2.0	0.12-0.20	3.6-5.5	Low----------	0.32		
	33-80	35-55	1.30-1.60	0.06-0.2	0.16-0.20	3.6-5.5	Moderate-----	0.32		
Bethera---------	0-6	5-20	1.30-1.50	0.6-2.0	0.11-0.16	3.6-6.0	Low----------	0.24	5	1-6
	6-62	35-50	1.10-1.50	0.06-0.6	0.14-0.18	3.6-6.0	Moderate-----	0.32		
LuC, LuD---------	0-6	7-20	1.35-1.65	2.0-6.0	0.11-0.15	3.6-5.5	Low----------	0.24	3	.5-1
Luverne	6-28	35-60	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate-----	0.28		
	28-65	---	--	---	---	---	----------	----		
MaB--------------	0-6	10-25	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	.5-1
Malbis	6-28	18-33	1.30-1.70	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.28		
	28-37	20-35	1.40-1.60	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28		
	37-72	20-35	1.45-1.70	0.2-0.6	0.06-0.12	4.5-5.5	Low----------	0.28		
OcC:										
Oktibbeha-------	0-3	27-40	1.20-1.50	0.06-2.0	0.13-0.17	4.5-6.5	Moderate-----	0.32	3	3-6
	3-36	60-80	1.00-1.30	<0.06	0.12-0.16	4.5-6.5	High---------	0.32		
	36-60	50-70	1.10-1.40	<0.06	0.05-0.10	6.6-8.4	High---------	0.32		
Cadeville-------	0-4	10-27	1.30-1.65	0.6-2.0	0.15-0.20	3.6-6.0	Low----------	0.43	5	.5-5
	4-40	39-60	1.20-1.45	<0.06	0.18-0.20	3.6-5.5	High---------	0.32		
	40-72	30-60	1.20-1.65	<0.2	0.18-0.20	3.6-5.5	High---------	0.32		
OsE:										
Oktibbeha-------	0-3	27-40	1.20-1.50	0.06-2.0	0.13-0.17	4.5-6.5	Moderate-----	0.32	3	3-6
	3-36	60-80	1.00-1.30	<0.06	0.12-0.16	4.5-6.5	High---------	0.32		
	36-60	50-70	1.10-1.40	<0.06	0.05-0.10	6.6-8.4	High---------	0.32		

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
OsE:										
Saffell---------	0-5	5-20	1.30-1.60	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.20	4	1-2
	5-28	10-35	1.25-1.60	0.6-2.0	0.06-0.10	4.5-5.5	Low----------	0.28		
	28-43	12-35	1.25-1.60	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28		
	43-60	10-25	1.30-1.65	0.6-6.0	0.04-0.11	4.5-5.5	Low----------	0.17		
OrB----------	0-6	7-15	1.30-1.50	2.0-6.0	0.07-0.10	4.5-6.0	Low----------	0.20	5	.5-2
Orangeburg	6-12	7-18	1.50-1.65	2.0-6.0	0.09-0.12	4.5-6.0	Low----------	0.20		
	12-72	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low----------	0.24		
OuC:										
Orangeburg------	0-6	7-15	1.30-1.50	2.0-6.0	0.07-0.10	4.5-6.0	Low----------	0.20	5	.5-2
	6-12	7-18	1.50-1.65	2.0-6.0	0.09-0.12	4.5-6.0	Low----------	0.20		
	12-72	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low----------	0.24		
Urban land.										
PITS.										
Pits										
PoB----------	0-8	5-15	1.35-1.55	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.20	5	.5-1
Poarch	8-44	8-18	1.35-1.55	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.24		
	44-72	10-25	1.45-1.65	0.2-0.6	0.10-0.20	4.5-5.5	Low----------	0.24		
RbB----------	0-5	7-20	1.40-1.55	2.0-6.0	0.07-0.14	4.5-6.0	Low----------	0.20	5	<2
Red Bay	5-9	10-25	1.30-1.60	0.6-6.0	0.10-0.14	4.5-6.0	Low----------	0.15		
	9-80	18-35	1.30-1.50	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.17		
TaC----------	0-62	2-12	1.30-1.70	6.0-20	0.08-0.12	4.5-5.5	Very low-----	0.15	5	<1
Troup	62-92	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20		
TgD:										
Troup----------	0-62	2-12	1.30-1.70	6.0-20	0.08-0.12	4.5-5.5	Very low-----	0.15	5	<1
	62-92	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20		
Gritney---------	0-11	8-30	1.50-1.60	6.0-20	0.10-0.15	4.5-5.5	Low----------	0.24	3	1-4
	11-20	30-45	1.55-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Moderate-----	0.32		
	20-53	35-60	1.55-1.70	0.06-0.2	0.10-0.15	4.5-5.5	High---------	0.32		
	53-72	20-35	1.50-1.65	0.2-0.6	0.10-0.15	4.5-5.5	High---------	0.28		
Saffell---------	0-5	5-20	1.30-1.60	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.20	4	1-2
	5-28	10-35	1.25-1.60	0.6-2.0	0.06-0.10	4.5-5.5	Low----------	0.28		
	28-43	12-35	1.25-1.60	0.6-2.0	0.06-0.12	4.5-5.5	Low----------	0.28		
	43-60	10-25	1.30-1.65	0.6-6.0	0.04-0.11	4.5-5.5	Low----------	0.17		
ToE:										
Troup----------	0-62	2-12	1.30-1.70	6.0-20	0.08-0.12	4.5-5.5	Very low-----	0.15	5	<1
	62-92	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20		
Orangeburg------	0-6	7-15	1.30-1.50	2.0-6.0	0.07-0.10	4.5-6.0	Low----------	0.20	5	.5-2
	6-12	7-18	1.50-1.65	2.0-6.0	0.09-0.12	4.5-6.0	Low----------	0.20		
	12-72	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low----------	0.24		
YoA----------	0-7	10-27	1.30-1.60	0.6-2.0	0.15-0.20	5.1-7.3	Low----------	0.28	5	1-5
Yonges	7-57	18-35	1.30-1.60	0.2-0.6	0.13-0.18	5.1-7.3	Low----------	0.17		
	57-90	10-35	1.30-1.50	0.6-2.0	0.12-0.16	6.1-8.4	Low----------	0.20		

TABLE 16.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
ArE---- Arundel	C	None----	---	---	>6.0	---	---	20-40	Soft	High----	High.
AtA---- Atmore	B/D	None----	---	---	0-1.0	Perched	Nov-Apr	>60	---	High----	High.
BbA---- Bibb	C	Frequent----	Brief----	Dec-May	0.5-1.5	Apparent	Dec-Apr	>60	---	High----	Moderate.
BgA---- Bigbee	A	Rare----	---	---	3.5-6.0	Apparent	Jan-Mar	>60	---	Low----	Moderate.
BoA---- Bonneau	A	None----	---	---	3.5-5.0	Apparent	Dec-Mar	>60	---	Low----	High.
CaA---- Cahaba	B	Rare----	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
CbA:											
Cahaba----	B	Rare----	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
Bigbee----	A	Rare----	---	---	3.5-6.0	Apparent	Jan-Mar	>60	---	Low----	Moderate.
ChA:											
Chrysler----	C	Occasional	Brief----	Dec-Apr	1.5-3.0	Apparent	Jan-Mar	>60	---	High----	High.
Yonges----	D	Frequent----	Brief----	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	High----	Moderate.
CoC---- Conecuh	D	None----	---	---	>6.0	---	---	>60	---	High----	High.
CwC---- Cowarts	C	None----	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
FuB---- Fuquay	B	None----	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	Low----	High.
GrA, GrB---- Greenville	B	None----	---	---	>6.0	---	---	>60	---	Moderate	High.
GuC:											
Greenville----	B	None----	---	---	>6.0	---	---	>60	---	Moderate	High.
Urban land.											
GyC:											
Gritney----	C	None----	---	---	>6.0	---	---	>60	---	High----	Moderate.
Malbis----	B	None----	---	---	2.5-4.0	Perched	Dec-Mar	>60	---	Moderate	Moderate.
Fuquay----	B	None----	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	Low----	High.
HaC---- Halso	D	None----	---	---	>6.0	---	---	40-60	Soft	High----	High.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
IbA:											
Izagora	C	Rare	Brief	Dec-Mar	2.0-3.0	Apparent	Dec-Mar	>60	---	Moderate	High.
Bethera	D	Occasional	Brief to long.	Dec-Apr	0-1.5	Apparent	Dec-Apr	>60	---	High	High.
LuC, LuD	C	None	---	---	>6.0	---	---	>60	---	High	High.
Luverne											
MaB	B	None	---	---	2.5-4.0	Perched	Dec-Mar	>60	---	Moderate	Moderate.
Malbis											
OcC:											
Oktibbeha	D	None	---	---	>6.0	---	---	>60	---	High	High.
Cadeville	D	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
OsE:											
Oktibbeha	D	None	---	---	>6.0	---	---	>60	---	High	High.
Saffell	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
OrB	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
Orangeburg											
OuC:											
Orangeburg	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
Urban land.											
PITS.											
Pits											
PoB	B	None	---	---	2.5-5.0	Apparent	Dec-Mar	>60	---	Low	High.
Poarch											
RbB	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
Red Bay											
TaC	A	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
Troup											
TgD:											
Troup	A	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
Gritney	C	None	---	---	>6.0	---	---	>60	---	High	Moderate.
Saffell	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
ToE:											
Troup	A	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
Orangeburg	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
YoA	D	Frequent	Brief	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	High	Moderate.
Yonges											

TABLE 17.--PHYSICAL ANALYSIS OF SELECTED SOILS

Soil name and sample number	Depth	Horizon	Particle-size distribution (Percent less than 2.0 mm)		
			Sand (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (0.002 mm)
	In				
Arundel: 1/					
S78AL-035-1	0-7	A	84.0	9.2	6.8
	7-16	Bt1	12.5	5.6	81.0
	16-24	Bt2	26.0	11.4	62.6
Conecuh: 1/					
S79AL-035-10	0-3	Ap	70.5	19.4	10.1
	3-16	Bt1	12.5	26.1	61.4
	16-23	Bt2	2.0	29.0	69.0
	23-32	Bt3	3.6	28.0	68.4
	32-43	Bt4	9.2	30.5	60.3
	43-50	BC	25.4	25.8	48.8
	50-72	C	40.3	25.2	34.5
Greenville: 1/					
S79AL-035-12	0-5	Ap	71.6	16.4	12.0
	5-9	BA	58.3	20.8	20.9
	9-40	Bt1	42.9	15.1	42.0
	40-80	Bt2	47.3	11.1	41.6
Malbis: 1/					
S79AL-035-15	0-6	Ap	62.2	27.2	10.6
	6-15	Bt1	49.8	29.4	20.8
	15-28	Bt2	47.2	27.6	25.2
	28-37	Bt3	46.1	24.0	29.9
	37-50	Btv1	49.2	20.6	30.2
	50-72	Btv2	53.0	19.1	27.9
Oktibbeha: 1/					
S79AL-035-17	0-3	A	30.7	29.9	39.4
	3-8	Bt1	8.3	21.3	70.4
	8-16	Bt2	8.6	22.7	68.7
	16-36	Bt3	2.4	18.4	79.2
	36-48	C1	5.0	25.1	69.9
	48-60	C2	8.0	25.4	66.6
Orangeburg: 2/					
S79AL-035-13	0-3	A1	73.7	20.0	6.3
	3-7	A2	73.2	19.5	7.3
	7-12	BA	68.4	19.8	11.8
	12-23	Bt1	55.8	17.6	26.6
	23-72	Bt2	54.7	15.5	29.8
Orangeburg: 1/					
S79AL-035-14	0-6	Ap	72.1	22.4	5.5
	6-12	BA	69.9	23.5	6.6
	12-20	Bt1	61.5	22.1	16.4
	20-72	Bt2	54.7	12.8	32.5
Orangeburg: 3/					
S79AL-035-18	0-7	Ap	69.4	22.8	7.8
	7-35	Bt1	54.5	16.9	28.6
	35-47	Bt2	60.8	11.4	27.8
	47-60	Bt3	65.8	12.1	22.1

1/ See "Soil Series and Their Morphology" for pedon location.

2/ About 3.5 miles west of Nymph, 1,500 feet east and 2,450 feet south of the northwest corner of sec. 7, T. 4 N., R. 11 E.

3/ About 3.5 miles south of Belleville, 100 feet north and 625 feet east of the southwest corner of sec. 24, T. 5 N., R. 9 E.

TABLE 18.--CHEMICAL ANALYSIS OF SELECTED SOILS

Soil name and sample number	Depth	Horizon	Extractable bases			Extractable acidity	Base saturation	Reaction	Cation-exchange capacity
			Ca	Mg	K				
	In		Meq/100g				Pct	pH	
Arundel: 1/									
S78AL-035-1	0-7	A	2.74	0.74	0.12	3.28	52.4	5.6	6.89
	7-16	Bt1	1.82	3.67	0.35	32.80	15.1	3.8	38.65
	16-24	Bt2	0.88	3.08	0.32	32.00	11.8	3.9	36.28
Conecuh: 1/									
S79AL-035-10	0-3	Ap	0.16	0.08	0.04	3.36	7.7	4.8	3.64
	3-16	Bt1	1.32	2.72	0.16	19.36	17.8	4.6	23.56
	16-23	Bt2	0.40	2.16	0.24	30.32	8.5	4.2	33.12
	23-32	Bt3	0.20	1.96	0.32	30.16	7.6	4.3	32.64
	32-43	Bt4	0.12	1.96	0.36	28.88	7.8	4.1	31.32
	43-50	BC	0.12	1.64	0.28	26.40	7.2	4.3	28.44
	50-72	C	0.12	1.28	0.24	20.80	7.3	4.3	22.44
Greenville: 1/									
S79AL-035-12	0-5	Ap	1.64	0.20	0.20	2.32	46.8	5.8	4.36
	5-9	BA	2.80	0.40	0.20	2.96	53.5	5.9	6.36
	9-40	Bt1	1.48	0.64	0.80	5.04	30.4	5.1	7.24
	40-80	Bt2	0.20	0.48	0.04	5.20	12.2	5.1	5.92
Malbis: 1/									
S79AL-035-15	0-6	Ap	0.32	0.20	0.04	4.56	10.9	4.8	5.12
	6-15	Bt1	0.55	0.14	0.01	4.40	13.9	5.1	5.11
	15-28	Bt2	0.31	0.25	0.02	5.20	10.0	5.0	5.78
	28-37	Bt3	0.13	0.20	0.02	5.44	6.0	5.0	5.78
	37-50	Btv1	0.14	0.20	0.01	5.12	6.4	5.3	5.47
	50-72	Btv2	0.06	0.09	0.01	5.44	2.8	5.3	5.60
Oktibbeha: 1/									
S79AL-035-17	0-3	A	8.92	1.80	0.16	8.72	55.5	4.5	19.60
	3-8	Bt1	7.76	1.28	0.16	12.64	42.1	4.4	21.84
	8-16	Bt2	8.80	1.00	0.16	13.44	42.6	4.3	23.40
	16-36	Bt3	10.16	0.84	0.24	12.00	48.4	4.2	23.24
	36-48	C1	25.12	0.64	0.20	2.72	90.5	6.4	28.68
	48-60	C2	24.84	0.64	0.16	2.16	92.2	8.1	27.76
Orangeburg: 2/									
S79AL-035-13	0-3	A1	0.28	0.12	0.08	4.80	9.1	4.7	5.28
	3-7	A2	0.28	0.12	0.04	2.80	13.6	5.2	3.24
	7-12	BA	0.40	0.20	0.04	2.88	18.2	5.2	3.52
	12-23	Bt1	0.64	0.44	0.04	4.08	21.5	5.1	5.02
	23-72	Bt2	0.40	0.40	0.04	4.00	17.4	5.1	4.84
Orangeburg: 1/									
S79AL-035-14	0-6	Ap	0.16	0.08	0.08	3.92	7.6	4.9	4.24
	6-12	BA	0.16	0.04	0.04	2.16	10.0	5.1	2.40
	12-20	Bt1	0.20	0.36	0.04	2.96	16.9	5.1	3.56
	20-72	Bt2	0.24	0.56	0.04	5.20	13.9	4.9	6.04
Orangeburg: 3/									
S79AL-035-18	0-7	Ap	1.48	0.20	0.20	2.48	43.1	5.8	4.36
	7-35	Bt1	1.80	0.60	1.20	4.00	47.4	5.3	7.60
	35-47	Bt2	1.12	0.24	0.04	3.36	29.4	5.2	4.76
	47-60	Bt3	0.40	0.12	0.04	2.48	18.4	5.0	3.04

1/ See "Soil Series and Their Morphology" for pedon location.

2/ About 3.5 miles west of Nymph, 1,500 feet east and 2,450 feet south of the northwest corner of sec. 7, T. 4 N., R. 11 E.

3/ About 3.5 miles south of Belleville, 100 feet north and 625 feet east of the southwest corner of sec. 24, T. 5 N., R. 9 E.

TABLE 19.--ENGINEERING INDEX TEST DATA

[Dashes indicate data were not available. NP means nonplastic]

Soil name, report number, horizon, and depth in inches	Classification		Grain-size distribution								Liquid limit	Plasticity index	Moisture density	
			Percentage passing sieve--							Percentage smaller than .005 mm			Maximum dry density	Optimum moisture
	AASHTO	Unified	2 inch	3/4 inch	3/8 inch	No. 4	No. 10	No. 40	No. 200					
											Pct		Lb/ft^3	Pct
Conecuh: 1/														
S79AL-035-10														
Bt1 - - - - - 3-16	A-7-5(18)	MH	100	100	100	99	97	95	70	64	60	23	94	23
Bt2 - - - - - 16-24	A-7-5(32)	MH	100	100	100	100	100	100	97	65	65	25	91	25
Bt4 - - - - - 32-43	A-7-5(34)	MH	100	100	100	100	100	96	92	70	72	27	94	27
Greenville: 1/														
S79AL-035-12														
Ap - - - - - 0-5	A-2-4(00)	SM	100	100	100	99	99	84	27	14	---	NP	121	10
Bt1 - - - - - 9-40	A-6(17)	CL	100	100	100	100	99	90	57	49	38	15	112	16
Bt2 - - - - - 40-80	A-7(04)	ML	100	100	100	99	99	90	54	48	38	10	109	18
Malbis: 1/														
S79AL-035-15														
Ap - - - - - 0-6	A-4(00)	SM	100	100	100	99	97	89	43	19	---	NP	117	11
Bt1 - - - - - 6-15	A-4(01)	CL-ML	100	100	100	99	98	92	55	33	24	6	115	12
Bt2 - - - - - 15-28	A-6(02)	CL	100	100	100	99	98	90	56	38	30	8	113	14
Oktibbeha: 1/														
S79AL-035-17														
Bt2 - - - - - 8-16	A-7-5(25)	CH	100	100	100	99	95	84	70	65	67	34	100	21
Bt3 - - - - - 16-36	A-7-5(77)	CH	100	100	100	100	100	99	98	98	106	62	---	---
C1 - - - - - 36-48	A-7-5(81)	CH	100	100	100	100	100	100	100	98	115	61	77	36
Orangeburg: 2/														
S79AL-035-18														
Ap - - - - - 0-7	A-2-4(00)	SM	100	100	100	100	100	93	30	16	---	NP	114	11
Bt1 - - - - - 7-35	A-6(03)	SC	100	100	100	100	100	95	49	42	35	11	113	14
Bt2 - - - - - 35-47	A-6(04)	SC	100	100	100	100	99	95	45	42	35	11	111	15

1/ See "Soil Series and Their Morphology" for pedon location.

2/ 3.5 miles south of Belleville, 100 feet north and 625 feet east of the southwest corner of sec. 24, T. 5 N., R. 9 E.

TABLE 20.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Arundel	Clayey, montmorillonitic, thermic Typic Hapludults
Atmore	Coarse-loamy, siliceous, thermic Plinthic Paleaquults
Bethera	Clayey, mixed, thermic Typic Paleaquults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Bigbee	Thermic, coated Typic Quartzipsamments
Bonneau	Loamy, siliceous, thermic Arenic Paleudults
Cadeville	Fine, mixed, thermic Albaquic Hapludalfs
Cahaba	Fine-loamy, siliceous, thermic Typic Hapludults
Chrysler	Clayey, mixed, thermic Aquic Paleudults
Conecuh	Clayey, montmorillonitic, thermic Aquic Hapludults
Cowarts	Fine-loamy, siliceous, thermic Typic Hapludults
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Greenville	Clayey, kaolinitic, thermic Rhodic Paleudults
Gritney	Clayey, mixed, thermic Typic Hapludults
Halso	Clayey, montmorillonitic, thermic Aquic Hapludults
Izagora	Fine-loamy, siliceous, thermic Aquic Paleudults
Luverne	Clayey, mixed, thermic Typic Hapludults
Malbis	Fine-loamy, siliceous, thermic Plinthic Paleudults
Oktibbeha	Very-fine, montmorillonitic, thermic Vertic Hapludalfs
Orangeburg	Fine-loamy, siliceous, thermic Typic Paleudults
Poarch	Coarse-loamy, siliceous, thermic Plinthic Paleudults
Red Bay	Fine-loamy, siliceous, thermic Rhodic Paleudults
Saffell	Loamy-skeletal, siliceous, thermic Typic Hapludults
Troup	Loamy, siliceous, thermic Grossarenic Paleudults
Yonges	Fine-loamy, mixed, thermic Typic Ochraqualfs

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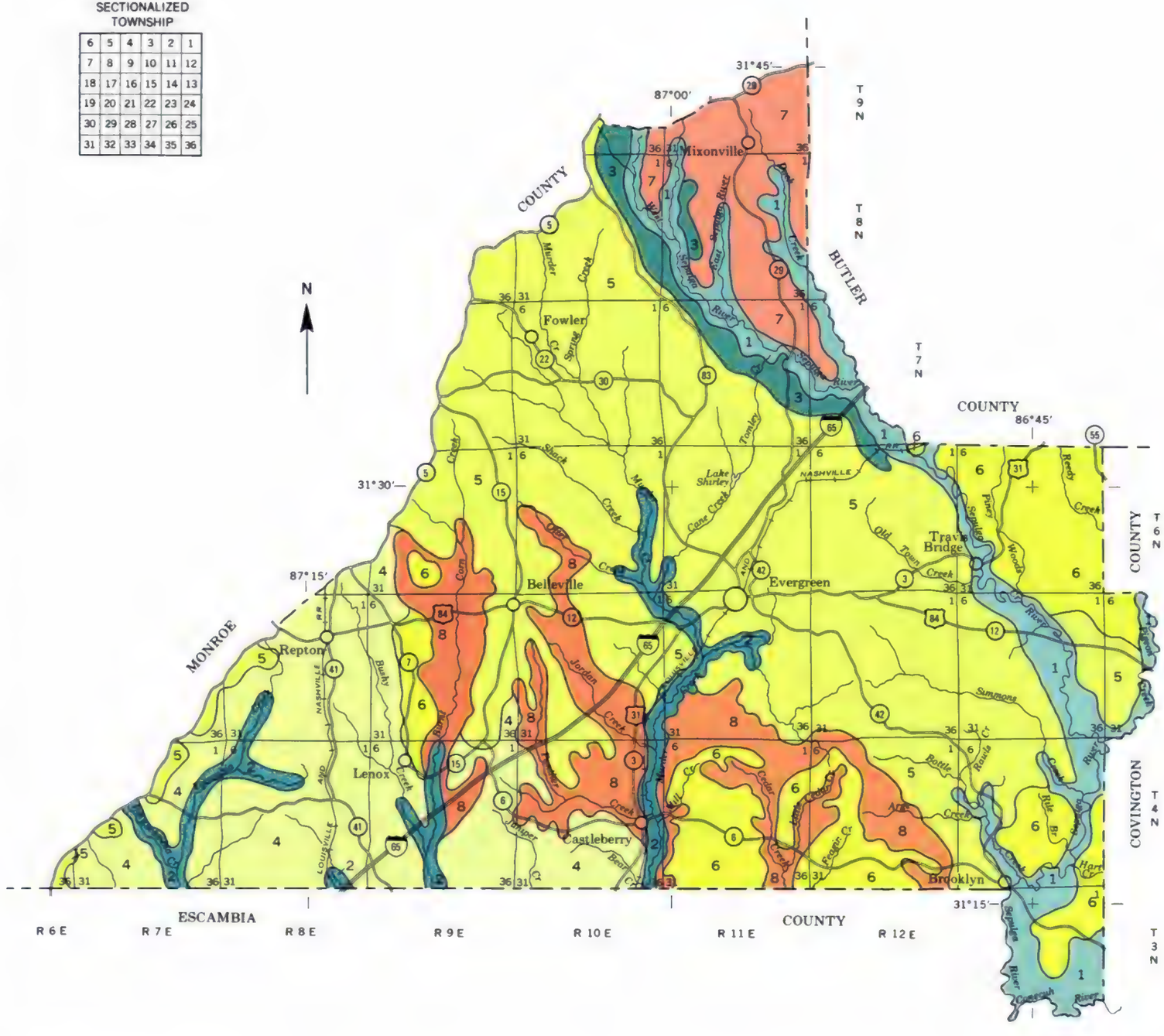
SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36



LEGEND

NEARLY LEVEL TO UNDULATING SOILS ON FLOOD PLAINS AND STREAM TERRACES

1 — Izagora-Chrysler-Cahaba: Moderately well drained and well drained soils that have a loamy or clayey subsoil; formed in loamy and clayey alluvial and marine sediments

2 — Bigg-Bigbee-Yonges: Poorly drained and excessively drained soils that are loamy and sandy throughout, sandy throughout, or soils that have a loamy subsoil; formed in alluvial sediments

UNDULATING TO HILLY SOILS ON SIDE SLOPES AND RIDGES

3 — Arundel: Well drained soils that have a clayey subsoil; formed in clayey marine sediments overlying horizontally bedded siltstone

UNDULATING TO MODERATELY STEEP SOILS ON RIDGETOPS AND SIDE SLOPES

4 — Malbis-Gritney-Fuquay: Well drained soils that have a loamy or clayey subsoil; formed in clayey, loamy, and sandy marine sediments

5 — Orangeburg-Troup-Greenville: Well drained soils that have a loamy or clayey subsoil or a thick sandy subsurface layer and a loamy subsoil; formed in loamy, sandy, and clayey marine sediments

6 — Orangeburg-Troup: Well drained soils that have a loamy subsoil or a thick sandy subsurface layer and a loamy subsoil; formed in loamy and sandy marine sediments

UNDULATING TO GENTLY ROLLING SOILS ON RIDGES AND PLATEAUS

7 — Luverne-Conecuh: Well drained and moderately well drained soils that have a clayey subsoil; formed in clayey marine sediments

8 — Oktibbeha-Cadeville-Yonges: Moderately well drained and poorly drained soils that have a clayey or loamy subsoil; formed in clayey and loamy marine and alluvial sediments

Compiled 1986

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ALABAMA AGRICULTURAL EXPERIMENT STATION
ALABAMA SOIL AND WATER CONSERVATION COMMITTEE

GENERAL SOIL MAP
CONECUH COUNTY, ALABAMA

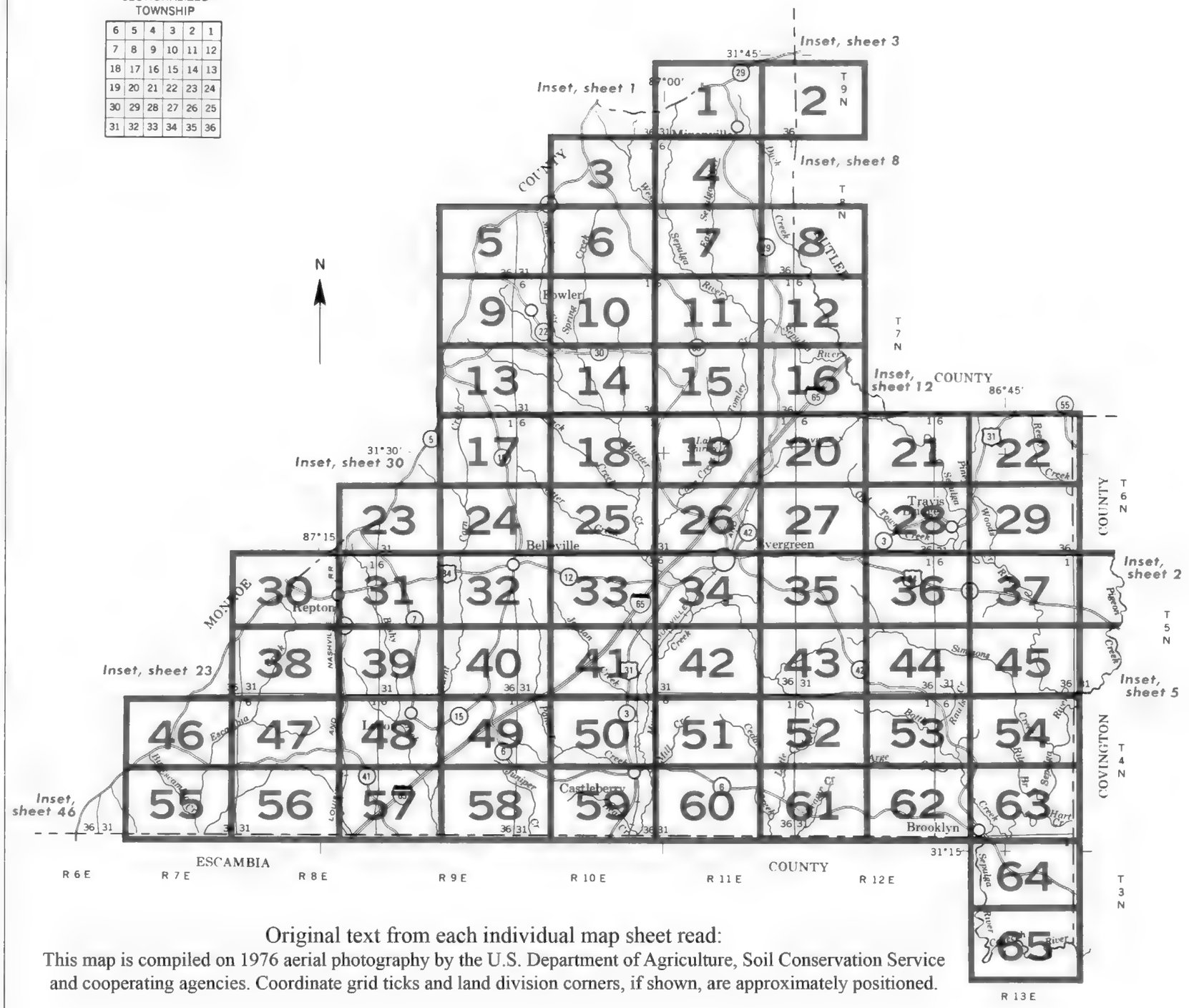
Scale 1:316,800

1 0 1 2 3 4 5 Miles

1 0 5 10 Km

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36



Original text from each individual map sheet read:

This map is compiled on 1976 aerial photography by the U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

INDEX TO MAP SHEETS
CONECUH COUNTY, ALABAMA

Scale 1:316,800

1 0 1 2 3 4 5 Miles

1 0 5 10 Km

655,000 FEET

T. 9 N.

N

1 Mile

5,000 Feet

Scale 1:20000

MONROE COUNTY

Little Escambia River

GrB ArE Pt ToE OrB LuD LuQ MaB IbA CoC HaC LuC

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

2

N

1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000

MONROE COUNTY

COVINGTON COUNTY

BUTLER COUNTY

T 9 N.

R 14 E

(Joins inset, sheet 8)

(Joins sheet 23)

(Joins inset, sheet 5)

Covington Pigeon Creek

HaC LuD LuC HbA TaC ToE OrB GrB BgA ChA IbA

Cohasset

13 14 23 24 25 26 35 36 6 5 7 8 9 16 17 18

CONECUH COUNTY, ALABAMA — SHEET NUMBER 3

T 8 N.
T. 9 N.
R 10 E.
(Joins sheet 1)
(Joins sheet 6)
MONROE COUNTY
BUTLER COUNTY
Sepulga River
West Fork
Skinnerdown
1000 AND 5000 FOOT GRID TICKS
N
1 Mile
5000 Feet
Scale 1:20000


4
N
1 Mile
5000 Feet
Scale 1:20000
Commerce
East
Sepulga
River
water
36
31
32
33
34
35
1
6
5
4
3
2
12
7
8
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18
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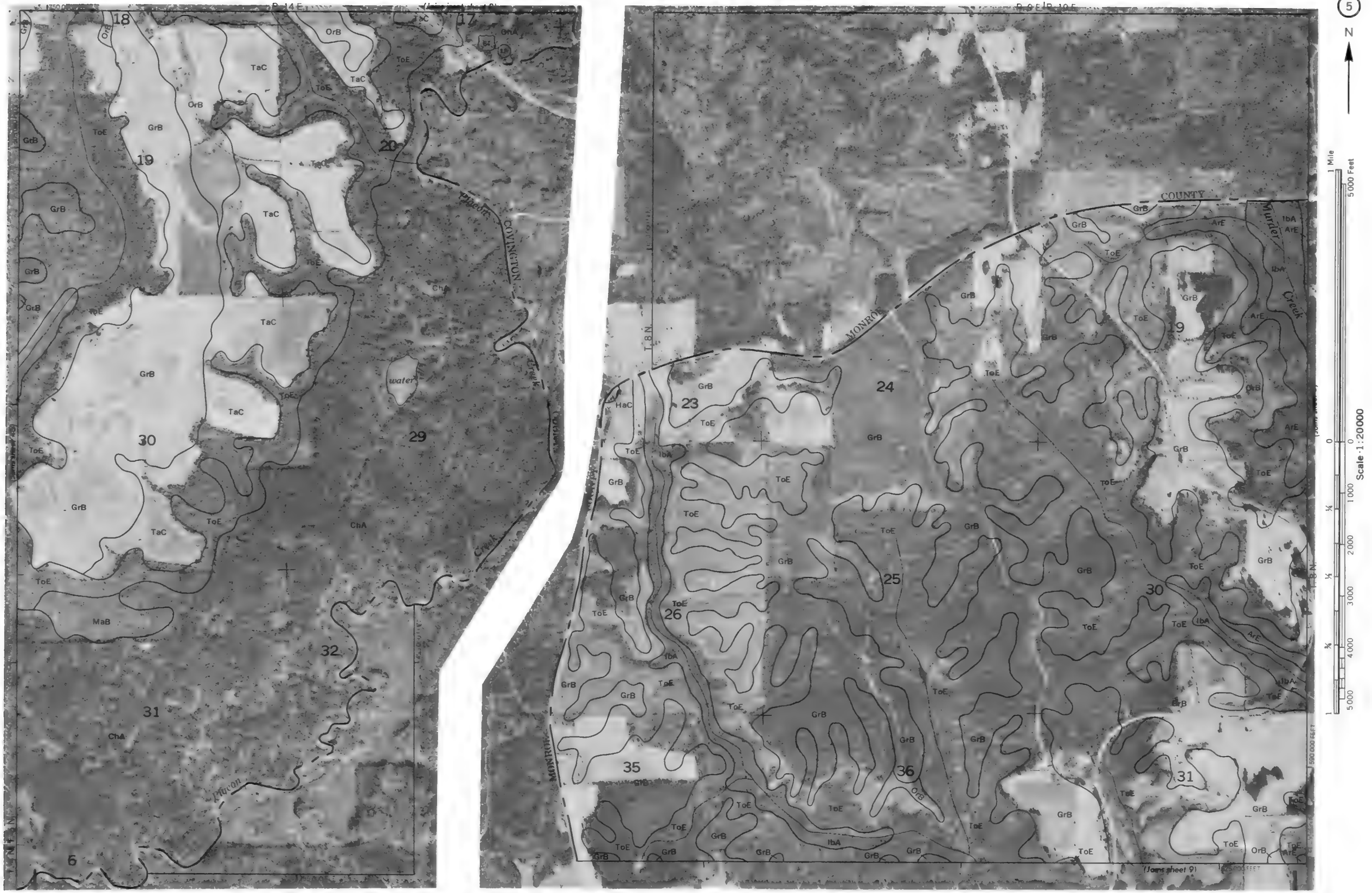
16
15
14
CoC
LuD
LuC
IbA
ArE
ToE
OrB
Pt


R 14 E
R 15 E
R 16 E
T 8 N
T 7 N
COVINGTON
MONROE
COUNTY
Murder Creek
Pigeon Creek
Creek
water
GrB
ToE
TaC
OrB
ChA
GtB
GnA
HaC
IbA
ArE
MaB
17
18
19
20
23
24
25
26
29
30
31
32
35
36
6
1 Mile
5000 Feet
Scale · 1 : 20000
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6

N

1 Mile
5000 Feet
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Scale 1:20000
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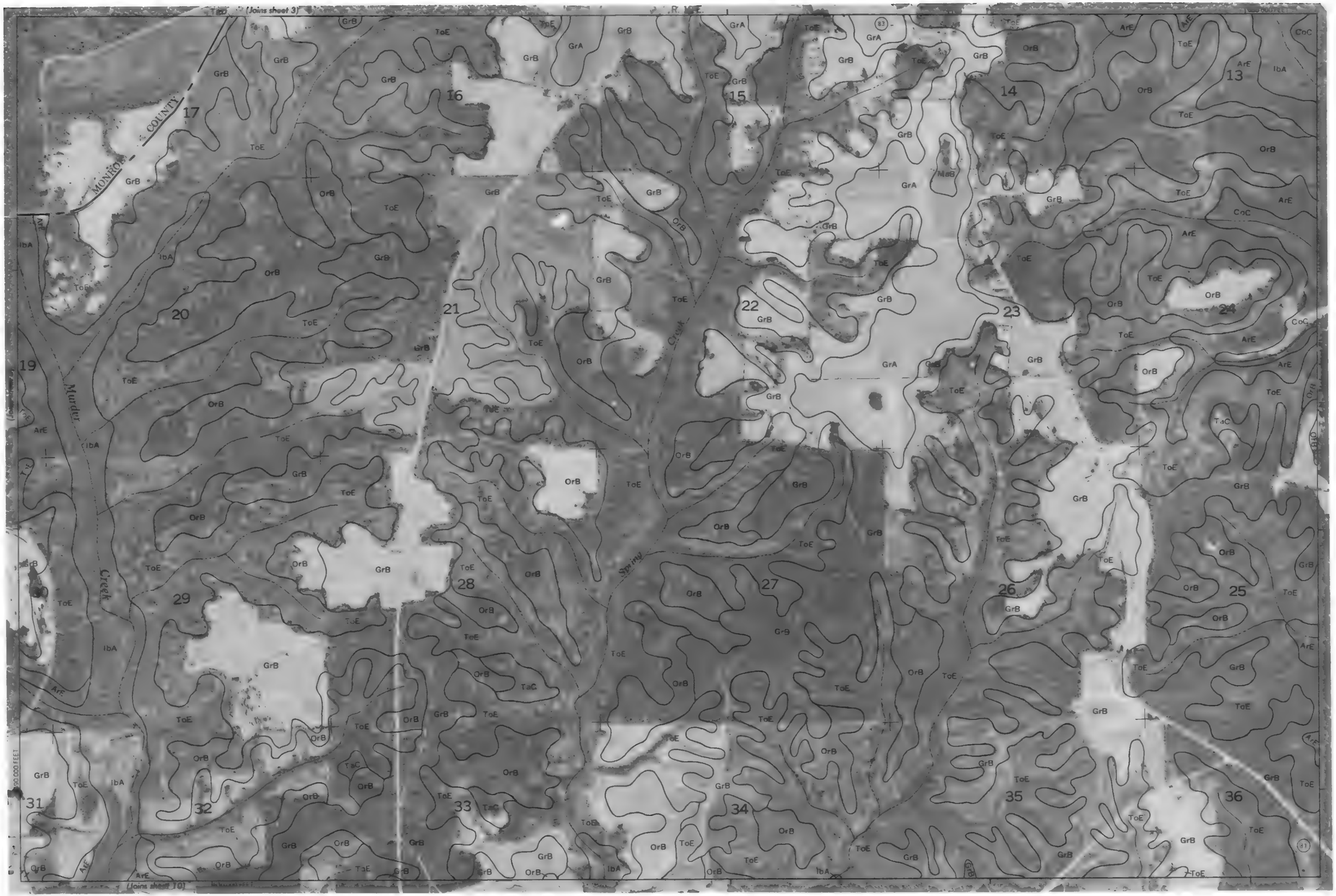
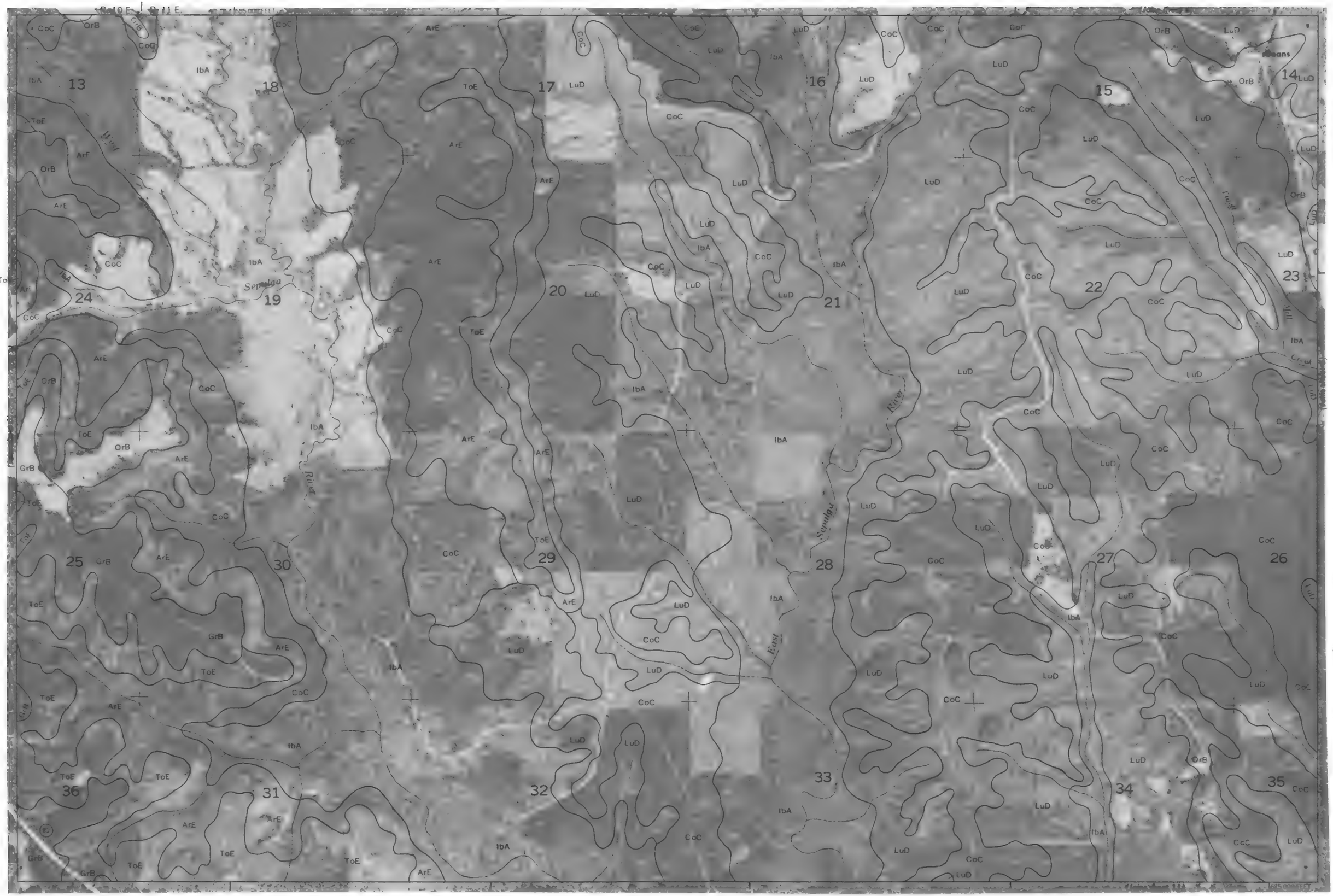
2000
3000
4000
5000




R.10E.
R.11E.
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36
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32
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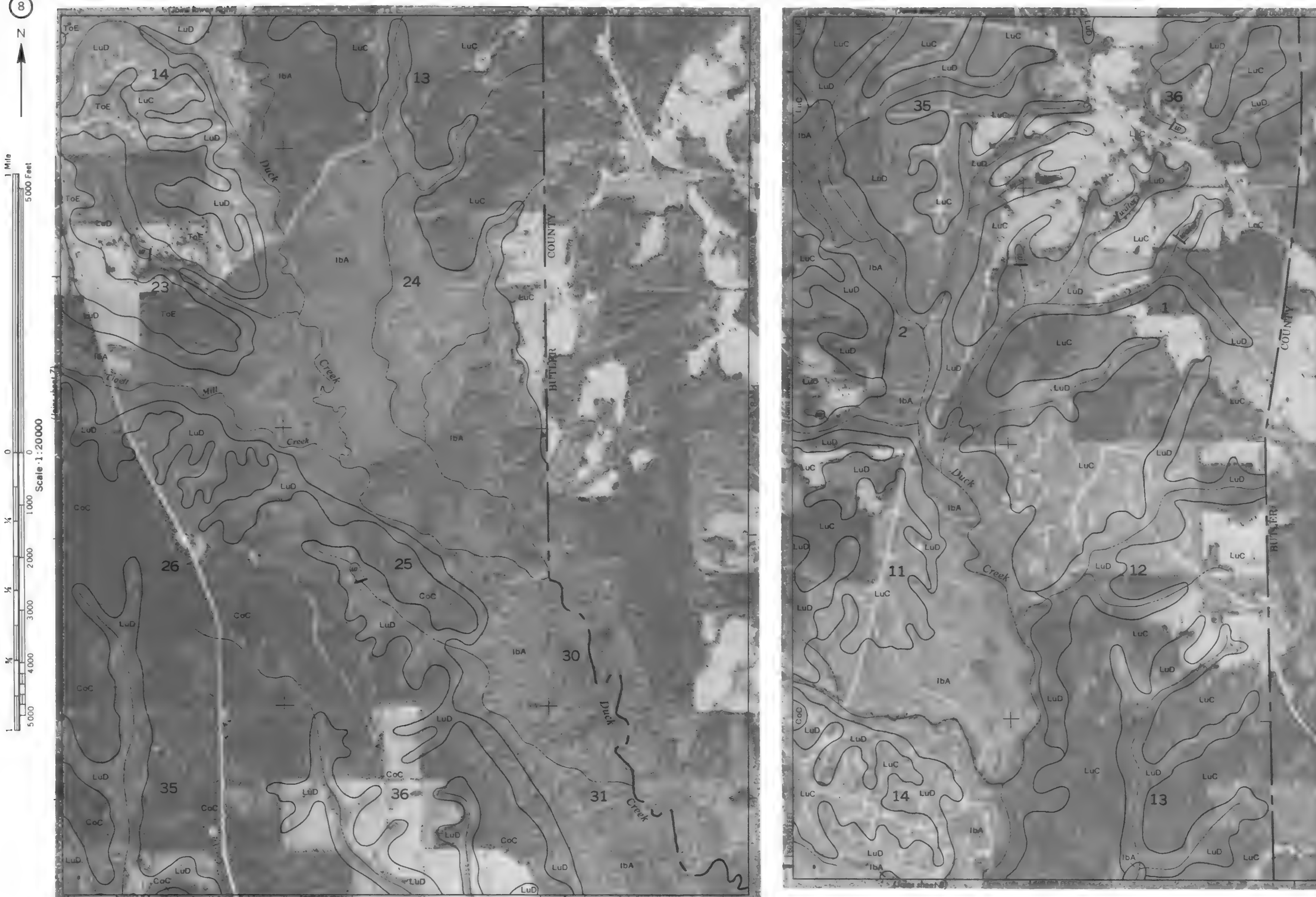
34
35
CoC
OrB
IbA
ToE
ArE
LuD
GrB
Sepulga
River
Creek
Scale 1:20000
1 Mile
5000 Feet
N
7


8
N
1 Mile
5000 Feet
Scale 1:20000
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¼
½
¾
1
0
1000
2000
3000
4000
5000
Duck Creek
Mill Creek
BUTLER COUNTY
CONECUH COUNTY
13
14
23
24
25
26
30
31
35
36
1
2
11
12
13
14
35
36
LuD
LuC
IbA
ToE
CoC


R. 10 E.
(Adds sheet 5)
Romah
Harpers Store
Green Street
Fowler
Lizzie
COUNTY
MONROE
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36
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2
6
5
12
7
8
10
15
14
13
18
17
ToE
GrB
OrB
ArE
IbA
BbA
N
1 Mile
5000 Feet
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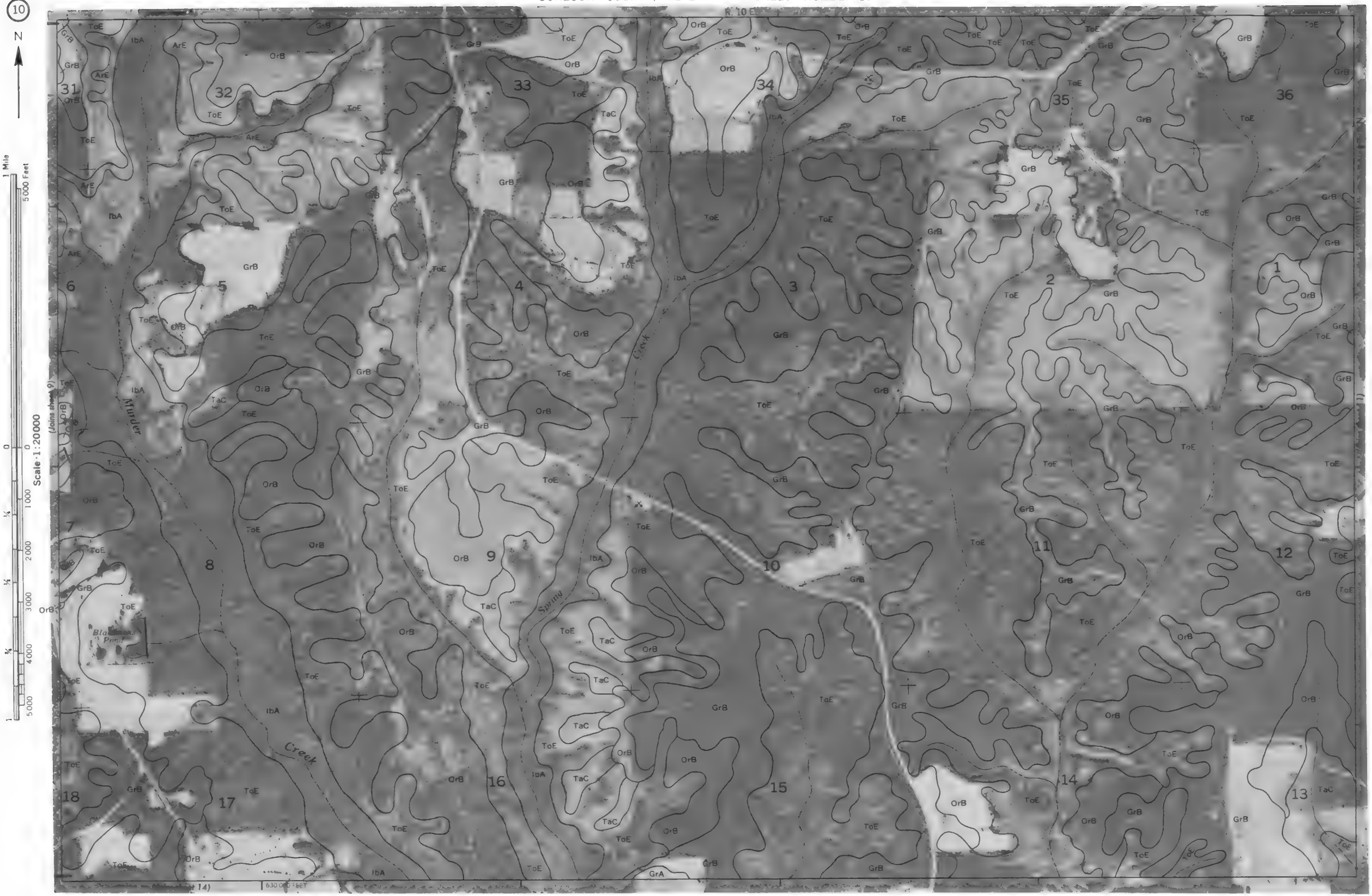
1000 2000 3000 4000 5000
1/5 0 1/5 000 FEET


10
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R. 10 E
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 9)
(Joins sheet 11)
(Joins sheet 14)
6300 0 FEET
Murder Creek
Spring Creek
Blackwater Pond
ToE
OrB
GrB
TaC
IbA
ArE
GrA
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11
N
1 Mile
5000 Feet
Scale 1:20000
West
East
Sepulga
Sepulga River
Bowles
Water
(Joins sheet 15)
ToE
GrB
LuD
IbA
CoC
ArE
OrB
TaC

12

N

1 Mile 5000 Feet

0 0

Scale 1:20000

1000 2000 3000 4000 5000

R 11 E | R 12 E

35 36 31 2 1 6 5 11 12 7 8 14 13 18 17

CoC LuD IbA ArE OrB MaB

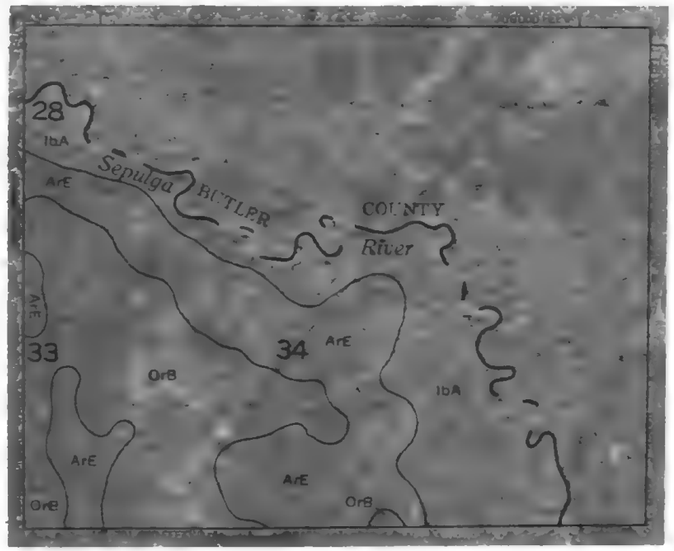
Sepulga River

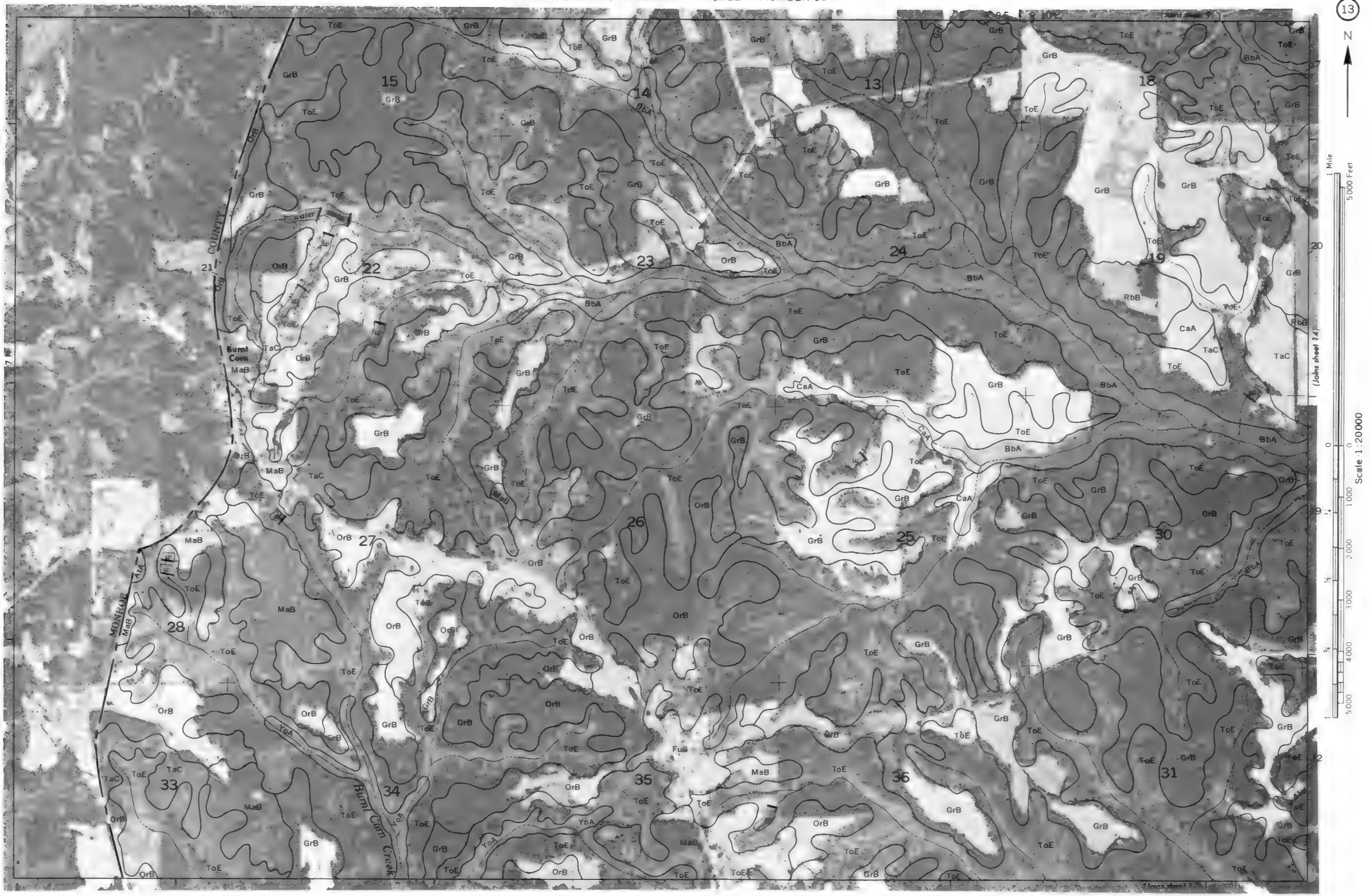
BUTLER COUNTY

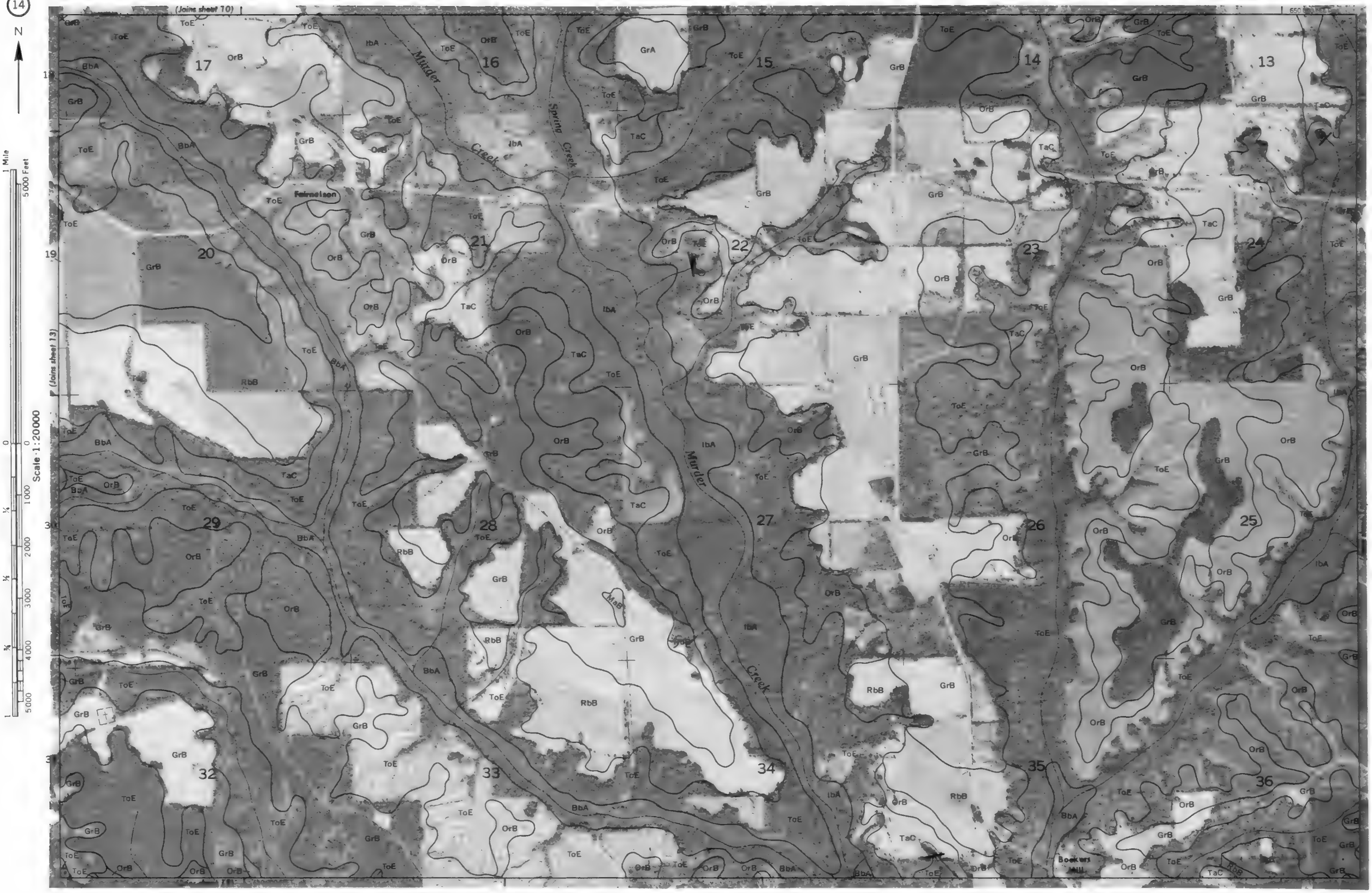
Butler Duck Creek

Butler

28 33 34




13
N
1 Mile
5000 Feet
Scale 1 : 20000
(Johns sheet 14)
COUNTY
Burnt Corn Creek
MONROE
Water
15
14
13
18
19
20
21
22
23
24
25
26
27
28
29
30
31
33
34
35
36
GrB
ToE
BbA
OrB
MaB
TaC
CaA
RbB
YoA
FuB


14
N
(Joins sheet 10)
(Joins sheet 13)
Fairnelson
Murder Creek
Spring Creek
Murder Creek
Bookers Mill
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000
17
16
15
14
13
20
21
22
23
24
29
28
27
26
25
32
33
34
35
36
GrB
ToE
OrB
BbA
TaC
IbA
RbB
GrA
MaB


R 11 E
000 FEET
Cooks Crossroads
Lyeffion
Tenmile Creek
water
13
18
17
16
15
14
24
19
20
21
22
23
25
30
29
28
27
26
36
31
32
33
34
35
TaC
ToE
OrB
GrB
ArE
IbA
BbA
83
15
N
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000

16

N

Scale 1:20000

1 Mile 5000 Feet

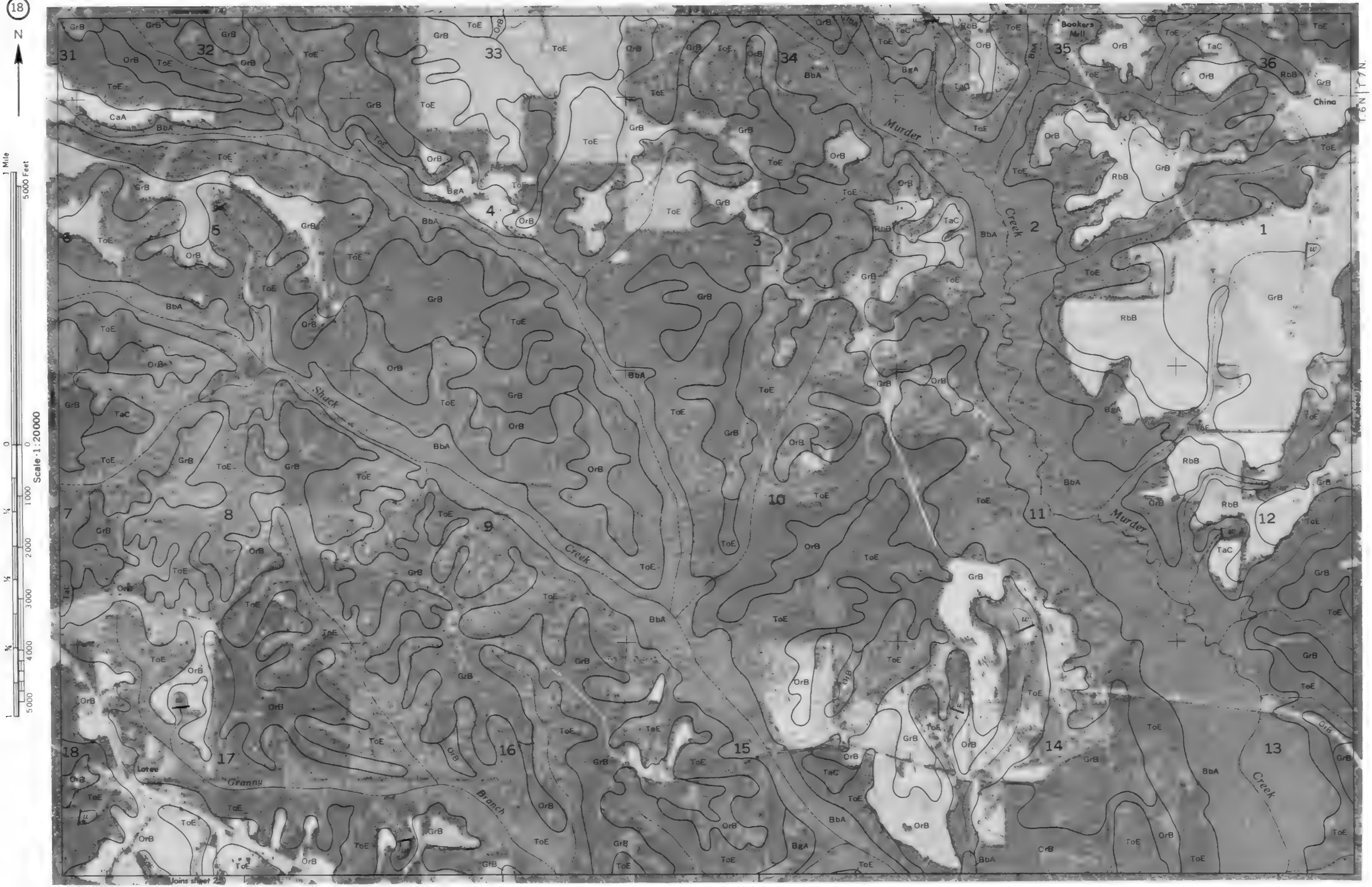
17

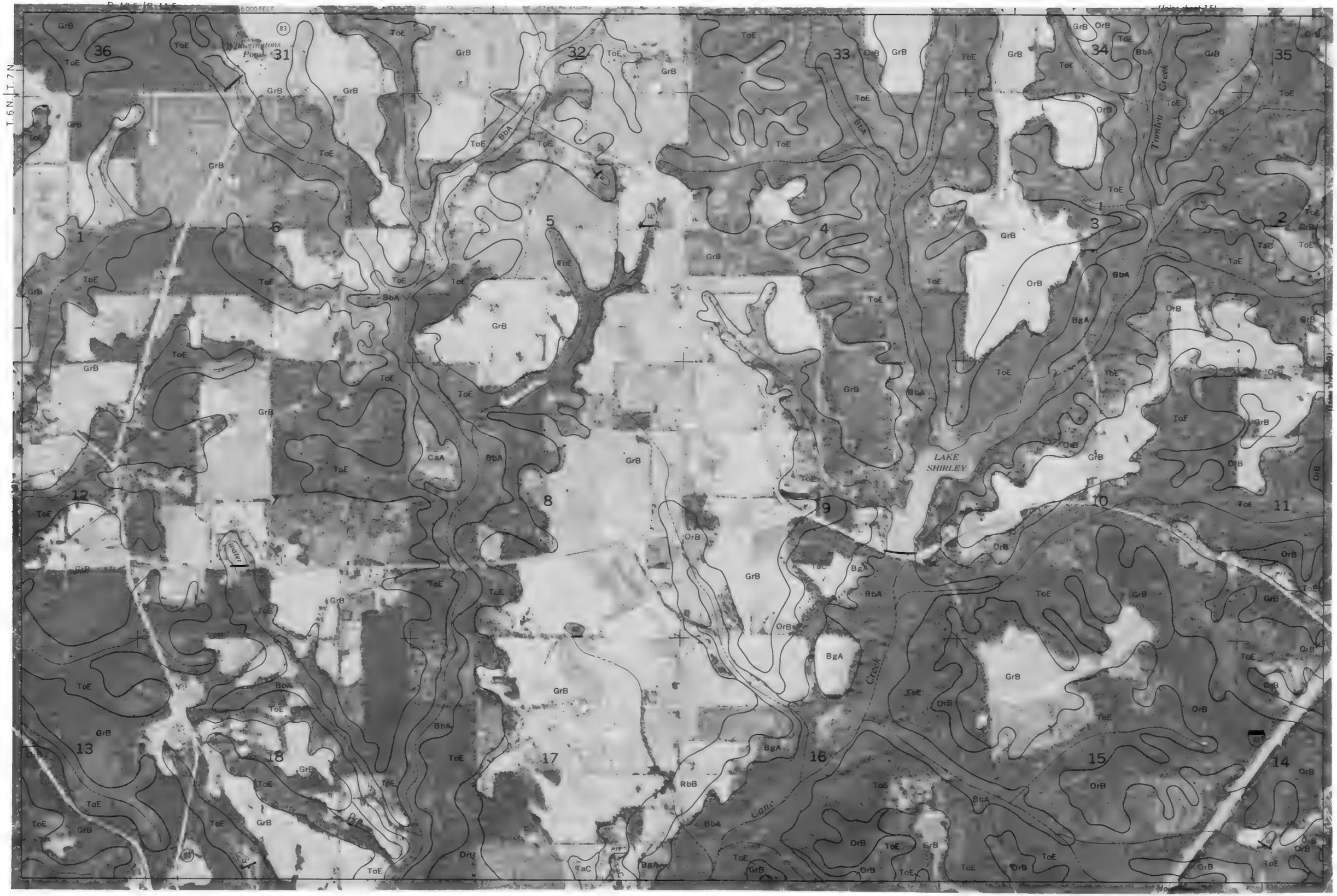
N

1 Mile

5000 Feet

Scale 1:20000


18
N
1 Mile
5000 Feet
Scale · 1 : 20000
0
¼
½
¾
1
1000
2000
3000
4000
5000
T. 7 N.
T. 6 N.
Bookers Mill
China
Murder Creek
Murder Creek
Shack Creek
Granny Branch
Creek
Creek
Lotee
Joins sheet 25
31
32
33
34
35
36
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
GrB
ToE
OrB
BbA
BgA
TaC
RbB
CaA


T. 6 N.
T. 7 N.
5,000 FEET
Williamsons Pond
Cutler
Tomley Creek
LAKE SHIRLEY
Cane Creek
GrB
ToE
BbA
OrB
BgA
CaA
RbB
TaC
Pit
36
31
32
33
34
35
1
6
5
4
3
2
12
7
8
9
10
11
13
18
17
16
15
14
19
N
1 Mile
5000 Feet
Scale 1:20000

CONECUH COUNTY, ALABAMA — SHEET NUMBER 20

20

N

R. 11 E. | R. 12 E.

T. 6 N. | T. 7 N.

(Joins sheet 19)

(Joins sheet 21)

1 Mile

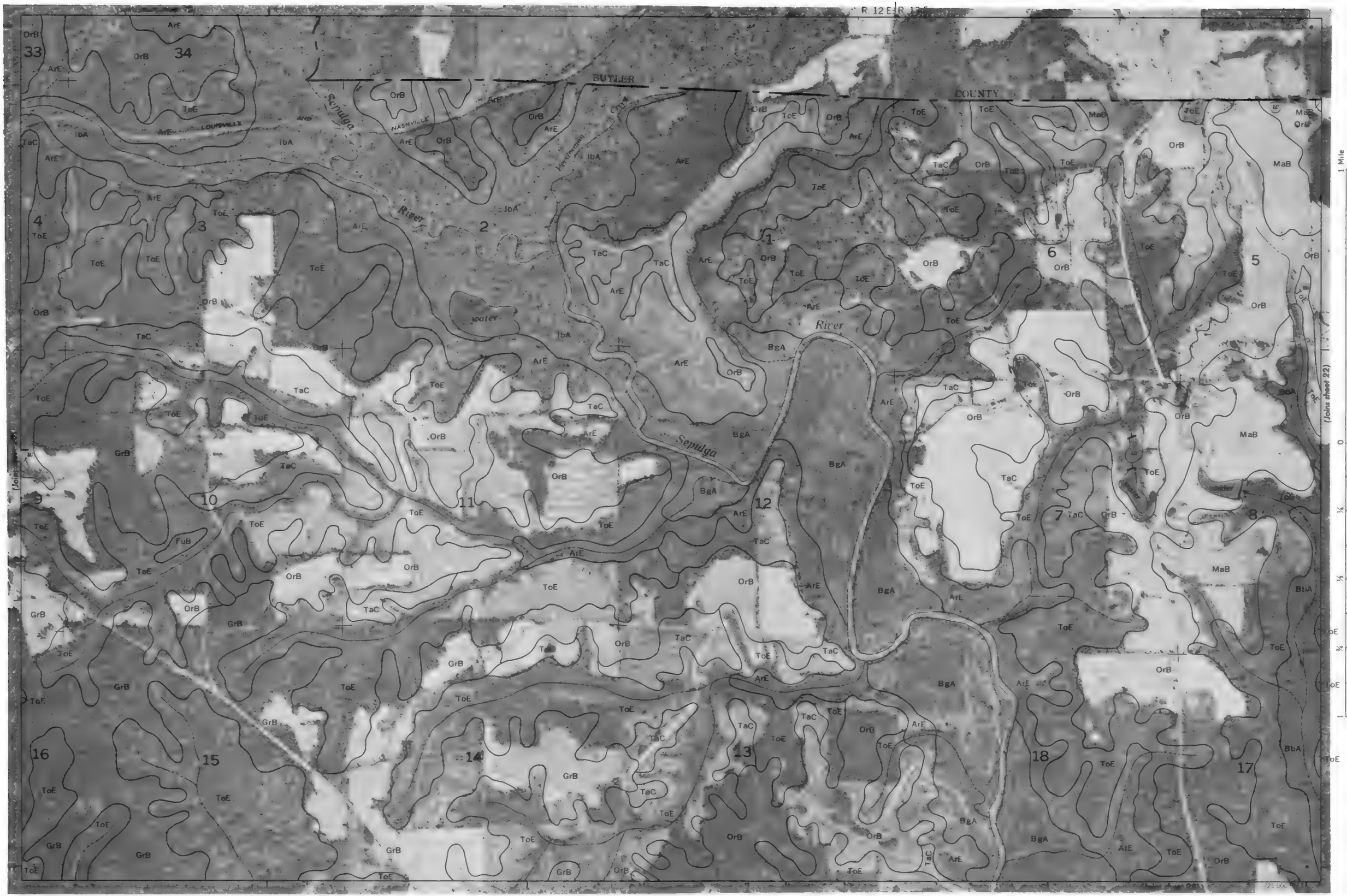
5000 Feet

Scale 1:20000

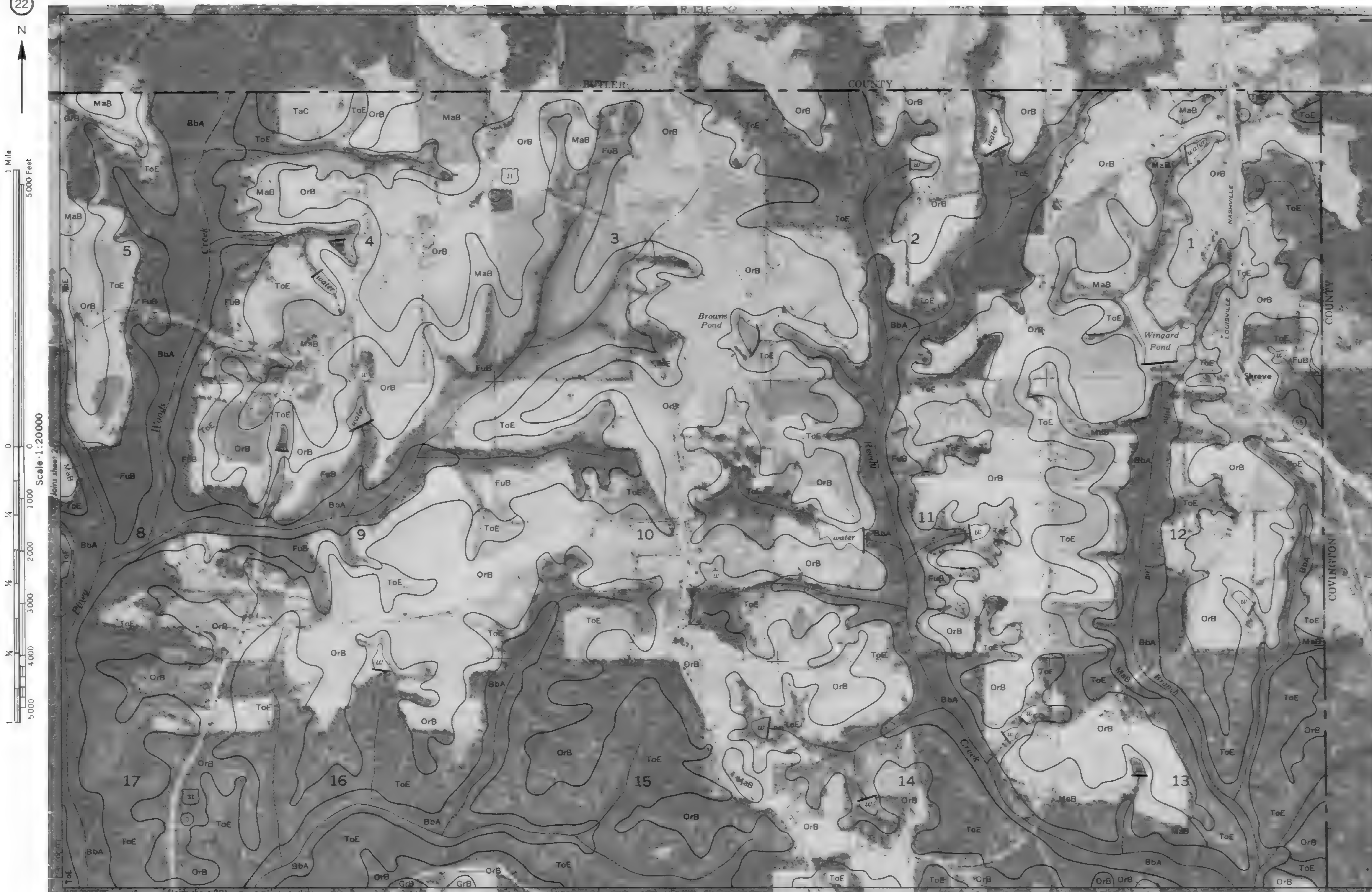
0 ½ 1000 2000 3000 4000 5000

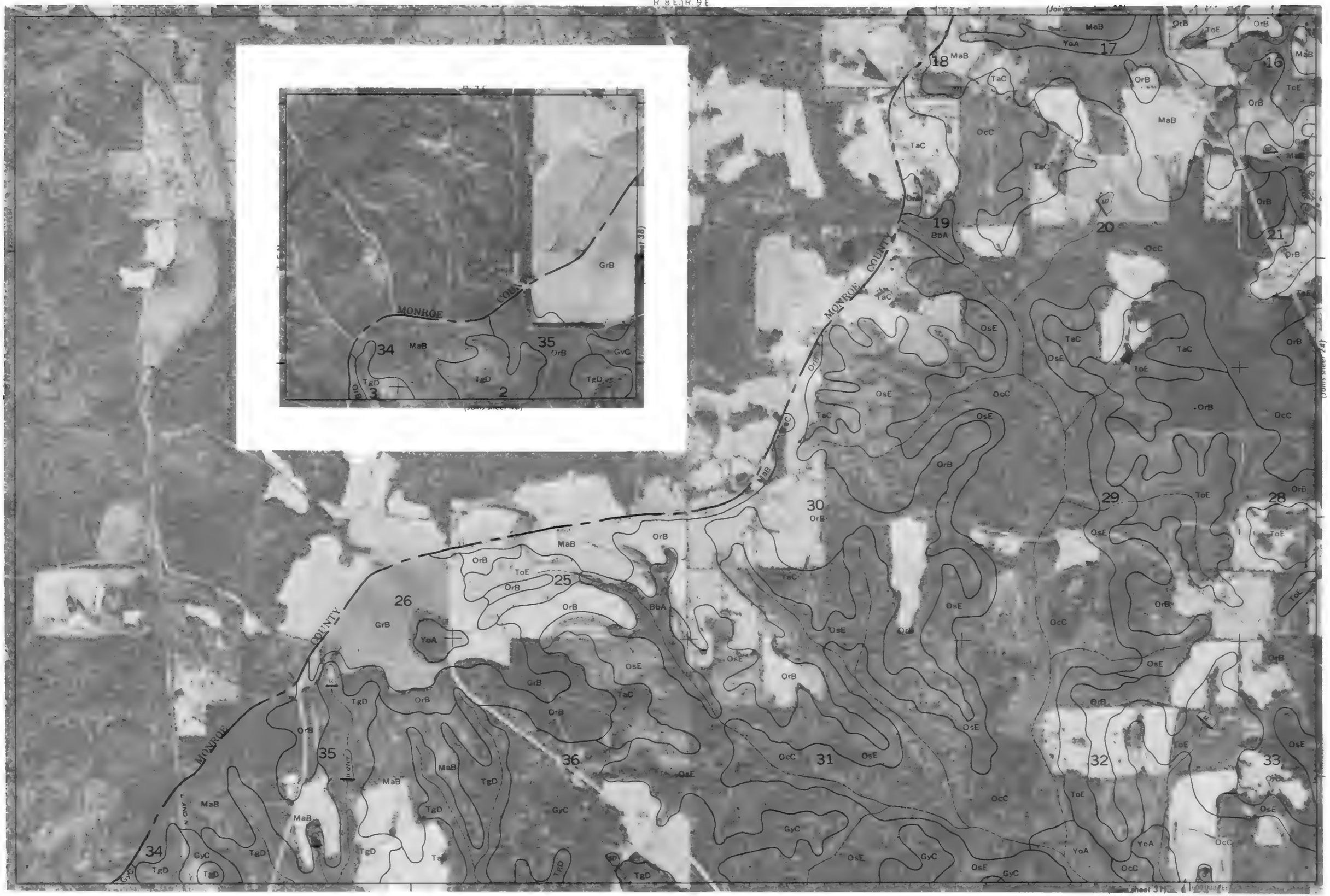
Owasso

NASHVILLE AND LOUISVILLE

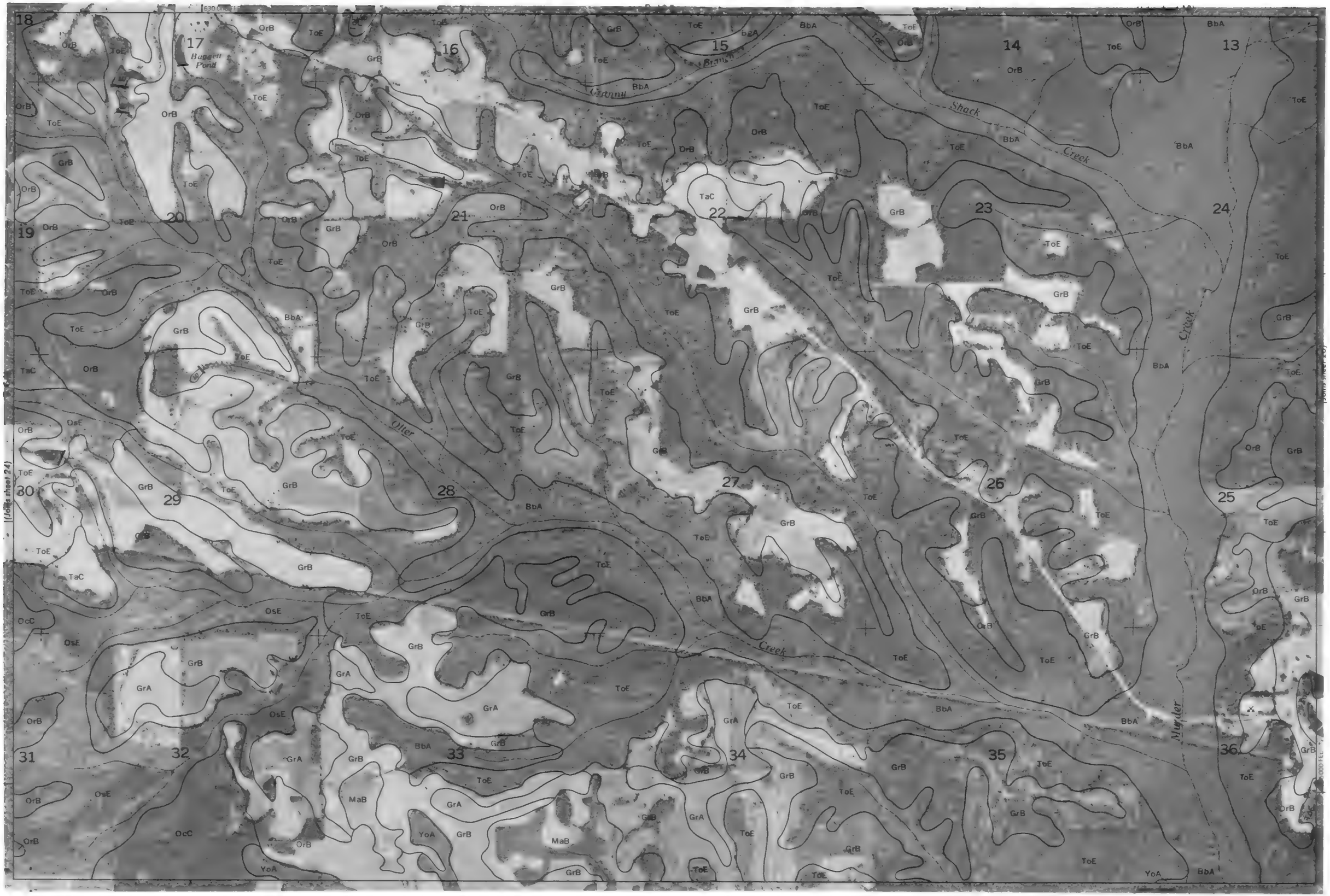

R 12 E
R 13
BUTLER
COUNTY
Sepulga
River
NASHVILLE AND LOUISVILLE
Persimmon Creek
water
Sepulga River
(Joins sheet 22)
1 Mile
5000 Feet
Scale 1:20000
725 000

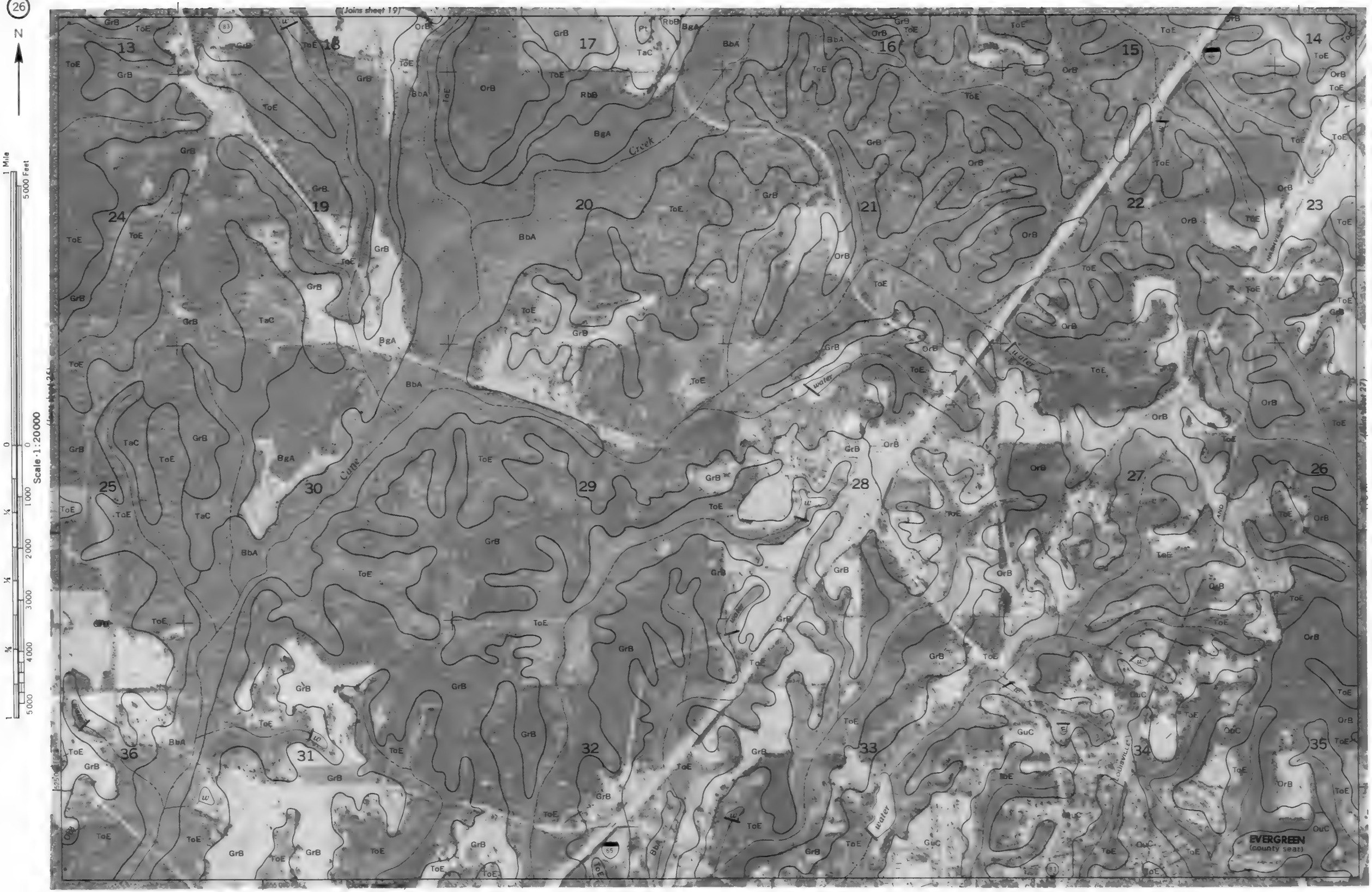
(22)


N
1 Mile
5000 Feet
Scale 1:20000
BUTLER COUNTY
COVINGTON COUNTY
R. 13 E.
Woods Creek
Piney Woods Creek
Brouns Pond
Wingard Pond
Shreve
Reedy Creek
Mill Branch
Joins sheet 21
Joins sheet 30
NASHVILLE
LOUISVILLE
water
31
55
1
2
3
4
5
8
9
10
11
12
13
14
15
16
17


R 8 E
R 9 E
MONROE COUNTY
CONECUH COUNTY
MONROE COUNTY
MONROE COUNTY
GrB
MaB
OrB
GvC
TgD
TaC
OcC
OsE
BbA
YoA
ToE
GyC
Water
17
18
19
20
21
16
25
26
28
29
30
31
32
33
34
35
36
2
3
(Joins sheet 38)
(Joins sheet 24)
(Joins sheet 31)
N
1 Mile
5000 Feet
Scale 1:20000


24
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 23)
(Joins sheet 25)
16
15
14
13
18
21
22
23
24
19
28
27
26
25
30
33
34
35
36
31
Nishburg
Creek
Corn
Burnt
water
YoA
GrB
TaC
OsE
OrB
ToE
MaB
FuB
BgA
OcC
RbB


Baggett Pond
Granny Branch
Shack Creek
Otter Creek
Murder Creek
(Joins sheet 24)
(Joins sheet 26)
18
17
16
15
14
13
19
20
21
22
23
24
30
29
28
27
26
25
31
32
33
34
35
36
OrB
ToE
GrB
BbA
TaC
OsE
OcC
GrA
MaB
YoA
25
N
1 Mile
5000 Feet
Scale 1:20000


26
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 19)
Creek
Cane
Creek
water
water
LOUISVILLE AND
EVERGREEN
(county seat)
GrB
ToE
BbA
BgA
TaC
RbB
OrB
GuC
Pt
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

CONECUH COUNTY, ALABAMA — SHEET NUMBER 27

R. 11 E. | R. 12 E.

27

N

1 Mile

5000 Feet

Scale 1:20000

1 0 1

1/4 1000

1/2 2000

3/4 3000

4000

5000

14 13 18 17 16

23 24 19 20 21

26 25 30 29 28

35 36 31 32 33

Brownville

Mill Creek

Water

OrB GrB ToE BbA IbA MaB CuC

28

N

1 Mile

5000 Feet

Scale 1:20000

R 12 E R 13 E

16 15 14 13 18 17

21 22 23 24 19 20

27 26 25 30 29

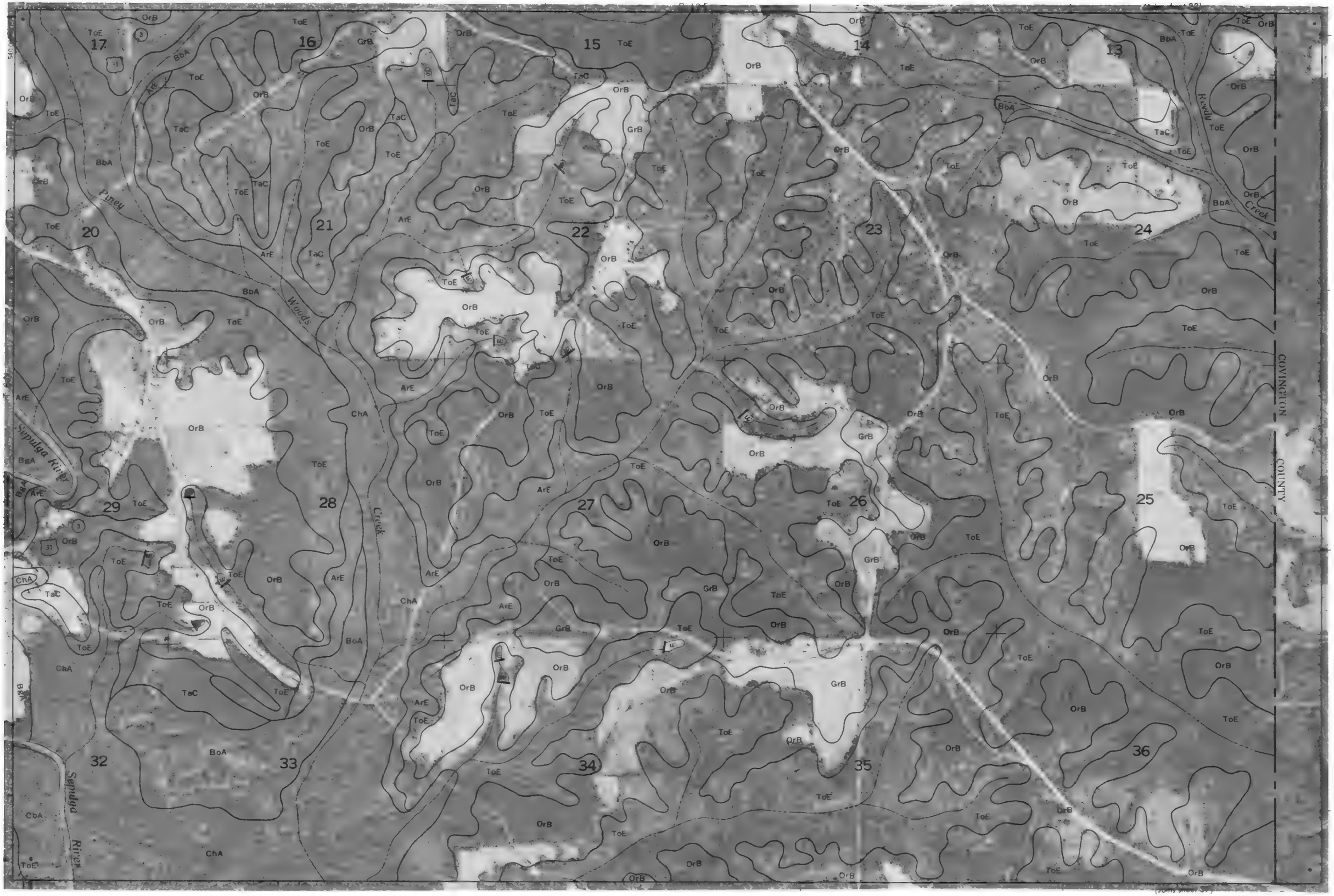
28 33 34 35 36 31 32

GrB ToE OrB TaC ArE BgA BbA ChA CbA

Old Town Creek

Sepulga River

Sepulga River


29
N
1 Mile
5000 Feet
Scale 1:20000
COVINGTON COUNTY
Piney Woods Creek
Sepulga River
Sepulga River
Reedy Creek
17
16
15
14
13
20
21
22
23
24
29
28
27
26
25
32
33
34
35
36
ToE
OrB
GrB
TaC
ArE
BbA
ChA
BoA

30

N

R. 8 E.

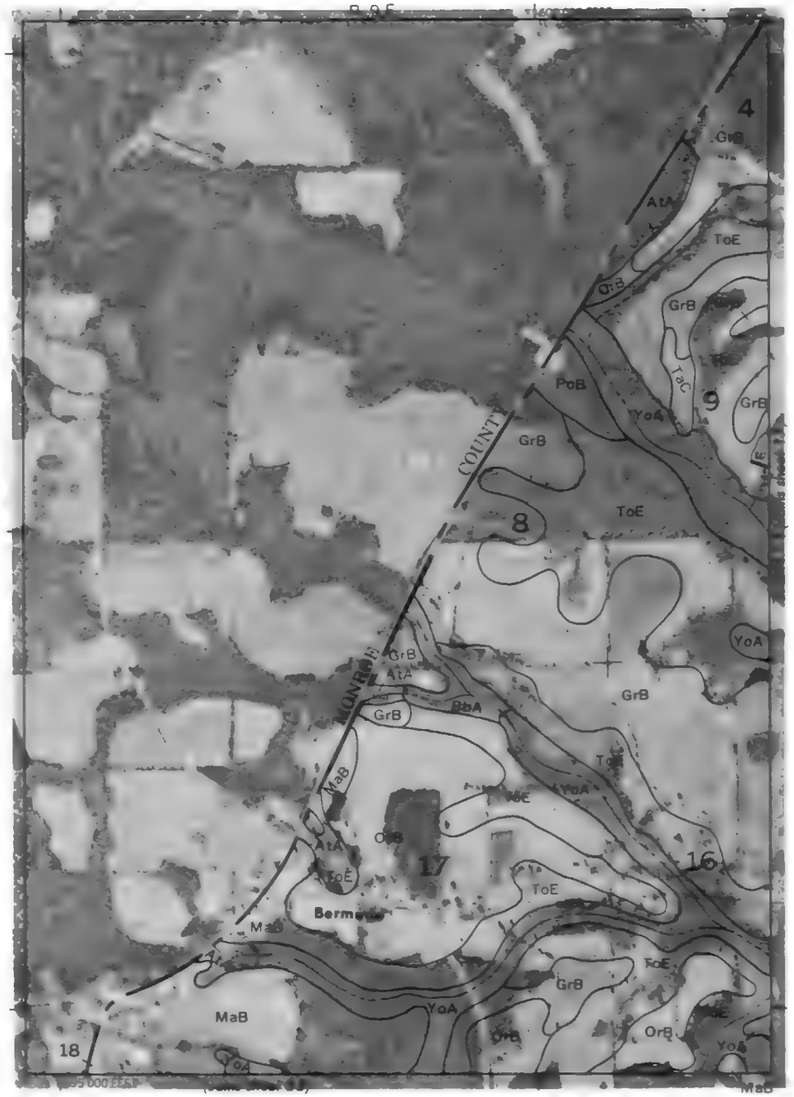
575,000 FEET

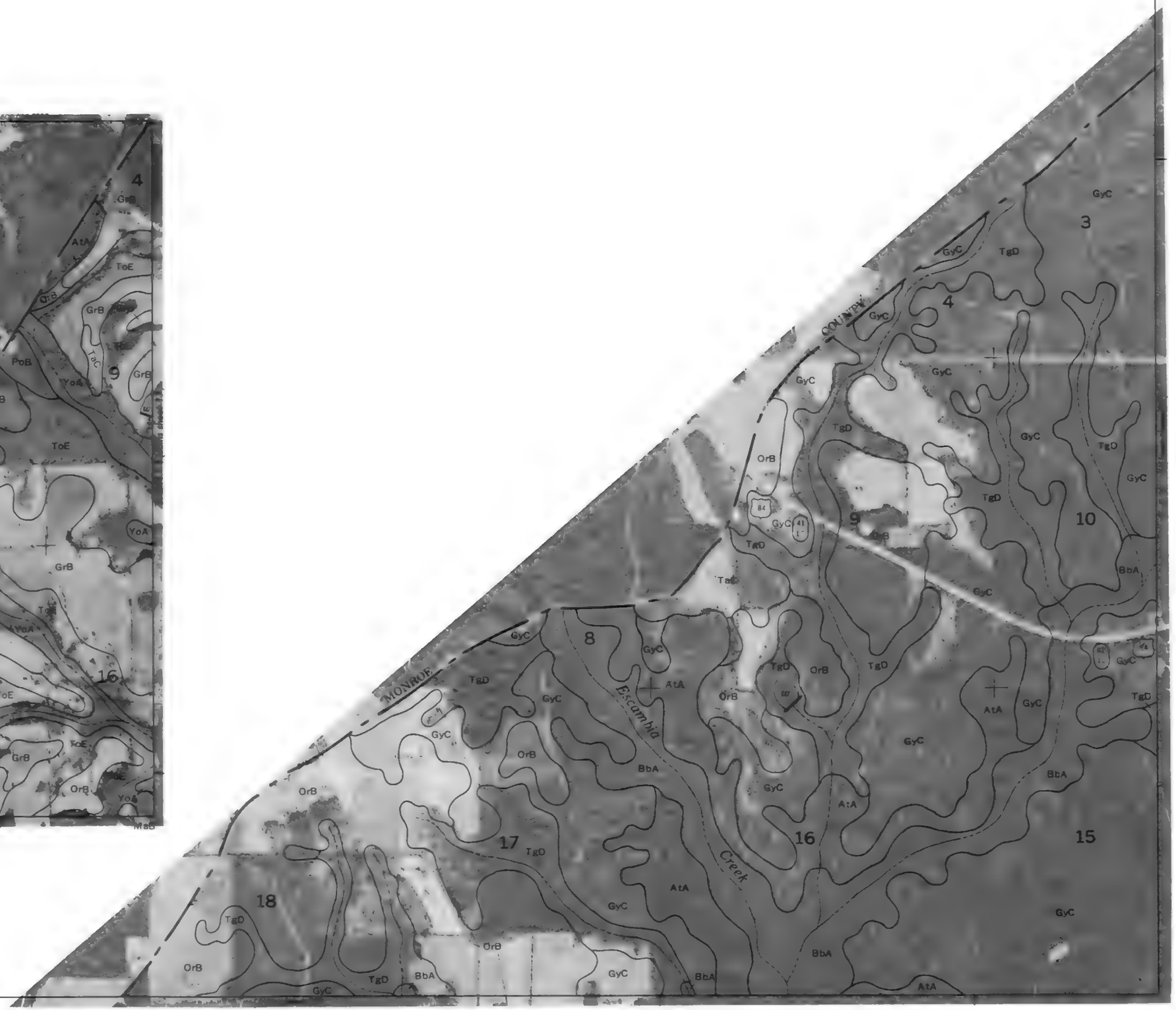
1 Mile 5000 Feet

Scale 1:20000

10,000 FEET

555,000 FEET





CONECUH COUNTY, ALABAMA — SHEET NUMBER 31

R.8E. | R.9E.

T.6N. | T.5N.

MONROE COUNTY

Repton

Brushy Creek

water

(Joins sheet 30)

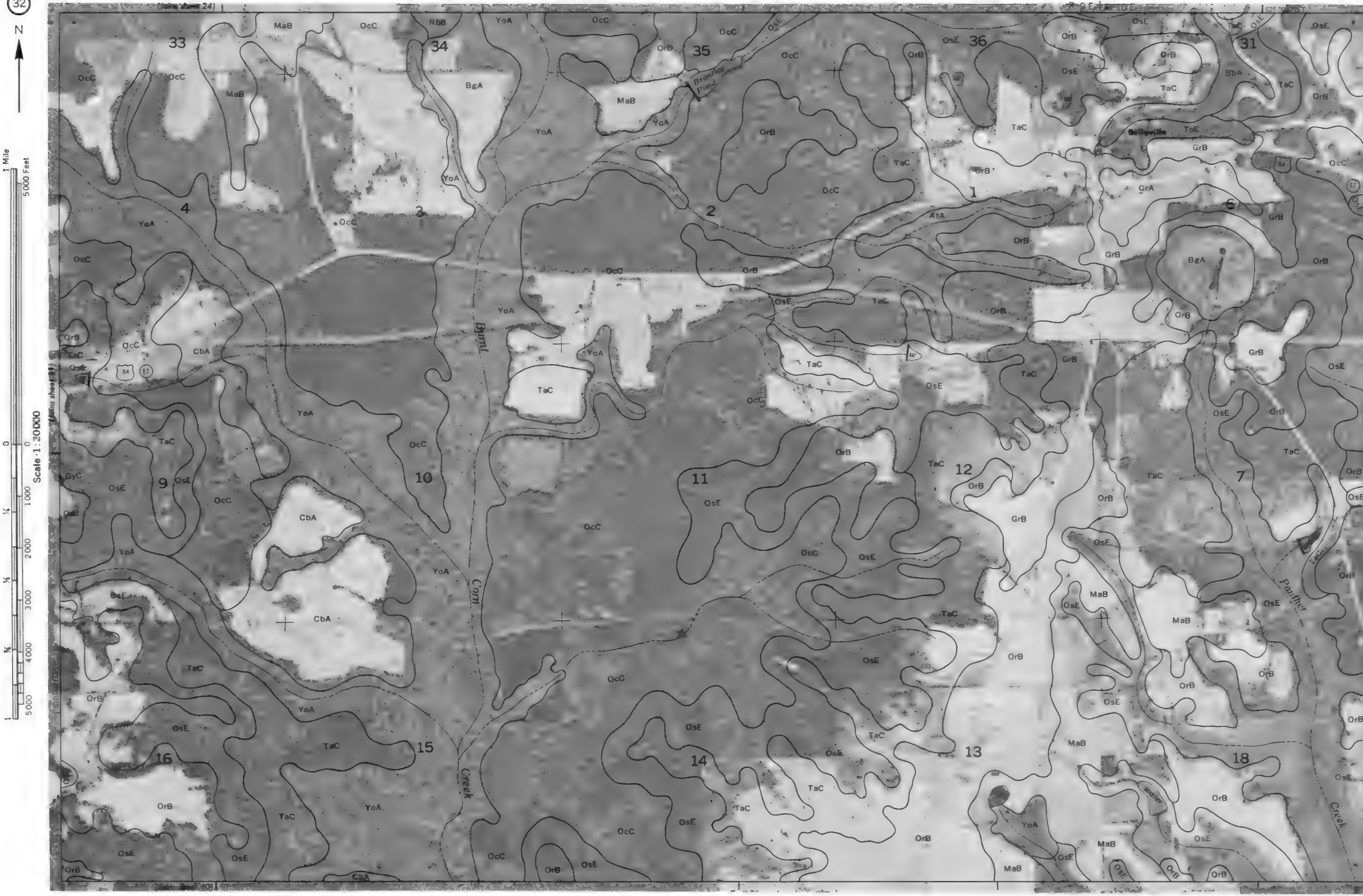
(Joins sheet 32)

(Joins sheet 3

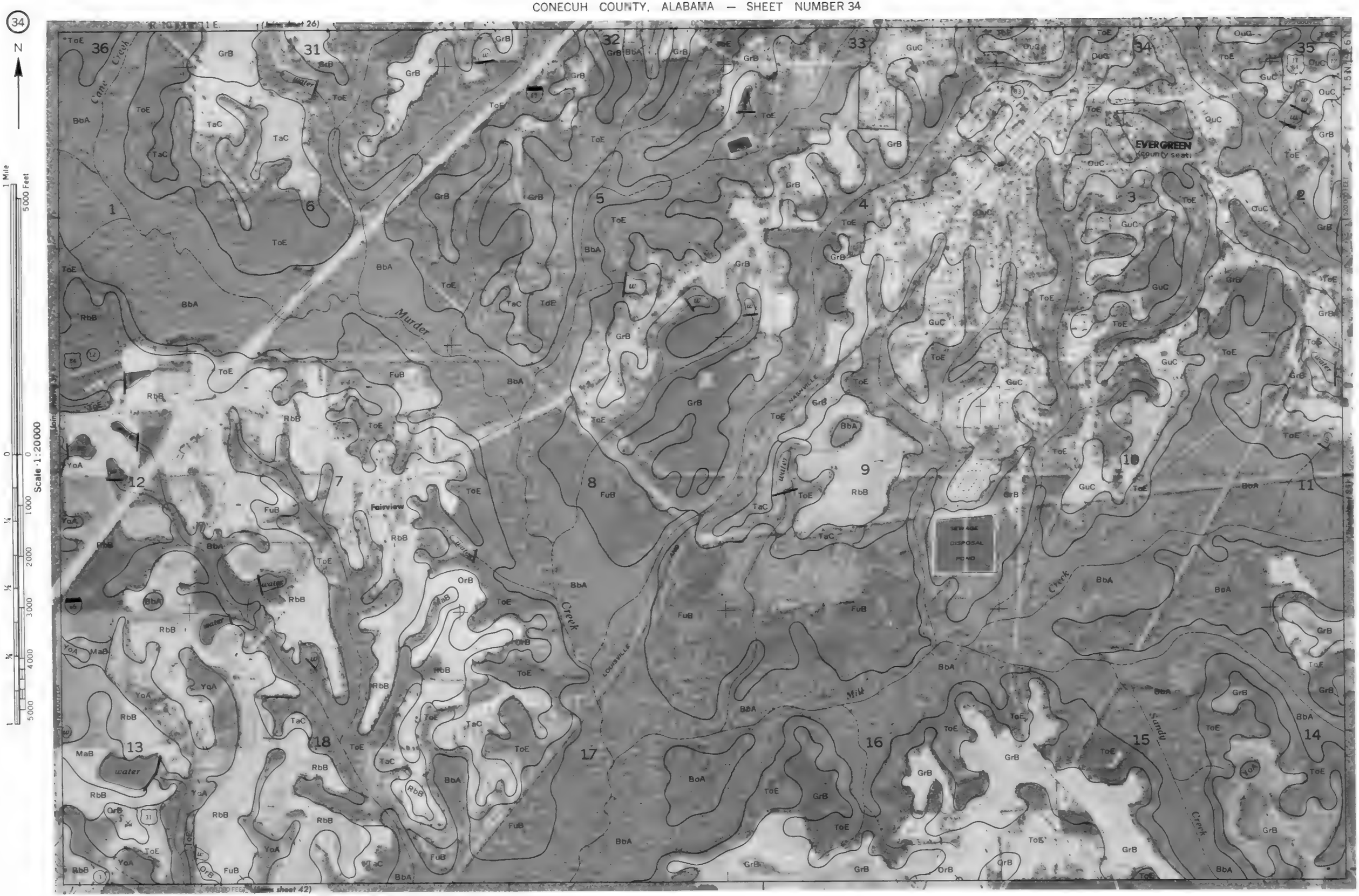
N

1 Mile 5000 Feet

Scale 1:20000


N
1 Mile
5000 Feet
0
1000
2000
3000
4000
5000
Scale 1:20000
Brantley Pond
Belleville
Burnt Corn Creek
Panther Creek
33
34
35
36
31
1
2
3
4
6
7
9
10
11
12
13
14
15
16
18
MaB
OcC
RbB
YoA
OsE
OrB
BgA
TaC
BbA
ToE
GrB
GrA
AtA
CbA
GyC
MaB


N
MIDDLETON FIELD
Stowers Pond
Hunter
Creek
Autrey
Creek
water
Scale 1:20000
1 Mile
5000 Feet
(Joins sheet 41)
(Joins sheet 32)


34
N
1 Mile
5000 Feet
Scale 1:20000
R 11 E.
T.5N.
EVERGREEN
(county seat)
Cane Creek
Murder Creek
Fairview
Louisville and Nashville
Mill Creek
Sandy Creek
SEWAGE DISPOSAL POND
water
36
31
32
33
34
35
1
6
5
4
3
2
12
7
8
9
10
11
13
18
17
16
15
14
ToE
GrB
BbA
TaC
GuC
OuC
RbB
FuB
YoA
MaB
OrB
TdE
BoA

CONECUH COUNTY, ALABAMA — SHEET NUMBER 35

R. 11 E. | R. 12 E.

T. 6 N.
T. 5 N.

(Joins sheet 27)

(Joins sheet 43)

N

1 Mile
5000 Feet

Scale 1:20000

0 0 1000 2000 3000 4000 5000


36
N
1 Mile
5000 Feet
Scale 1:20000
Old Town
Herbert
Simmons Creek
Water
ToE
OrB
GrB
BbA
TaC
RbB
MaB
CbA

37

N

1 Mile

5000 Feet

Scale · 1 : 20000

38

N

1 Mile 5000 Feet

Scale 1:20000

1 0 1/4 0 1/2 1000 3/4 2000 1 3000 1 1/4 4000 1 1/2 5000

(Joins sheet 30)

575 000 FEET

16 15 17 18 19 20 21 22 24 25 30 29 28 27 31 32 33 34 35 36

T 5 N

MONROE COUNTY

Escambia Creek

495 000 FEET

(Joins sheet, sheet 29)

OrB TgD GyC AtA BbA TaC MaB PoB GrB


39
N
Scale 1:20000
1 Mile
5000 Feet
0
1000
2000
3000
4000
5000
T. 5 N.
15
13
18
17
16
22
23
24
19
20
21
27
26
25
30
29
28
34
35
36
31
32
33
Brushy
Creek
Louisville
Nashville
41
GyC
TgD
BbA
AtA
OrB
Pt
OsE
TaC
MaB
wat

40

N

R. 9 E. R. 10 E.

1 Mile 5000 Feet

Scale 1:20000

0 0 ¼ 1000 ½ 2000 ¾ 4000 1 5000

16 15 14 13 18

21 22 23 24 19

28 27 26 25 30

33 34 35 36 31

Creek Burnt Creek Panther Creek

water water water water

OrB OsE TaC OcC YoA CbA MaB FuB PoB


R. 13
18
17
16
15
14
13
19
20
21
22
23
24
30
29
28
27
26
25
31
32
33
34
35
36
OsE
OrB
MaB
OcC
YoA
ToE
RbB
PoB
BbA
BgA
CbA
CaA
BoA
TaC
Pt
Panther Creek
Jordan Creek
Autrey Creek
Murder Creek
water
LOUISVILLE AND NASHVILLE R.R.
65
31
41
N
1 Mile
5000 Feet
Scale 1:20000
T. 4 N.

42

N

R 10 E | R 11 E | (Also sheet 34)

T. 4 N

1 Mile

5000 Feet

Scale 1:20000

0 ¼ ½ ¾ 1

0 1000 2000 3000 4000 5000

13 18 17 16 15 14

24 19 20 21 22 23

25 30 29 28 27 26

36 31 32 33 34 35

RbB ToE OrB FuB YoA PoB BgA CbA GrB OcC OsE MaB BbA

Murder Creek

Antley Creek

Sandy Creek

NASHVILLE

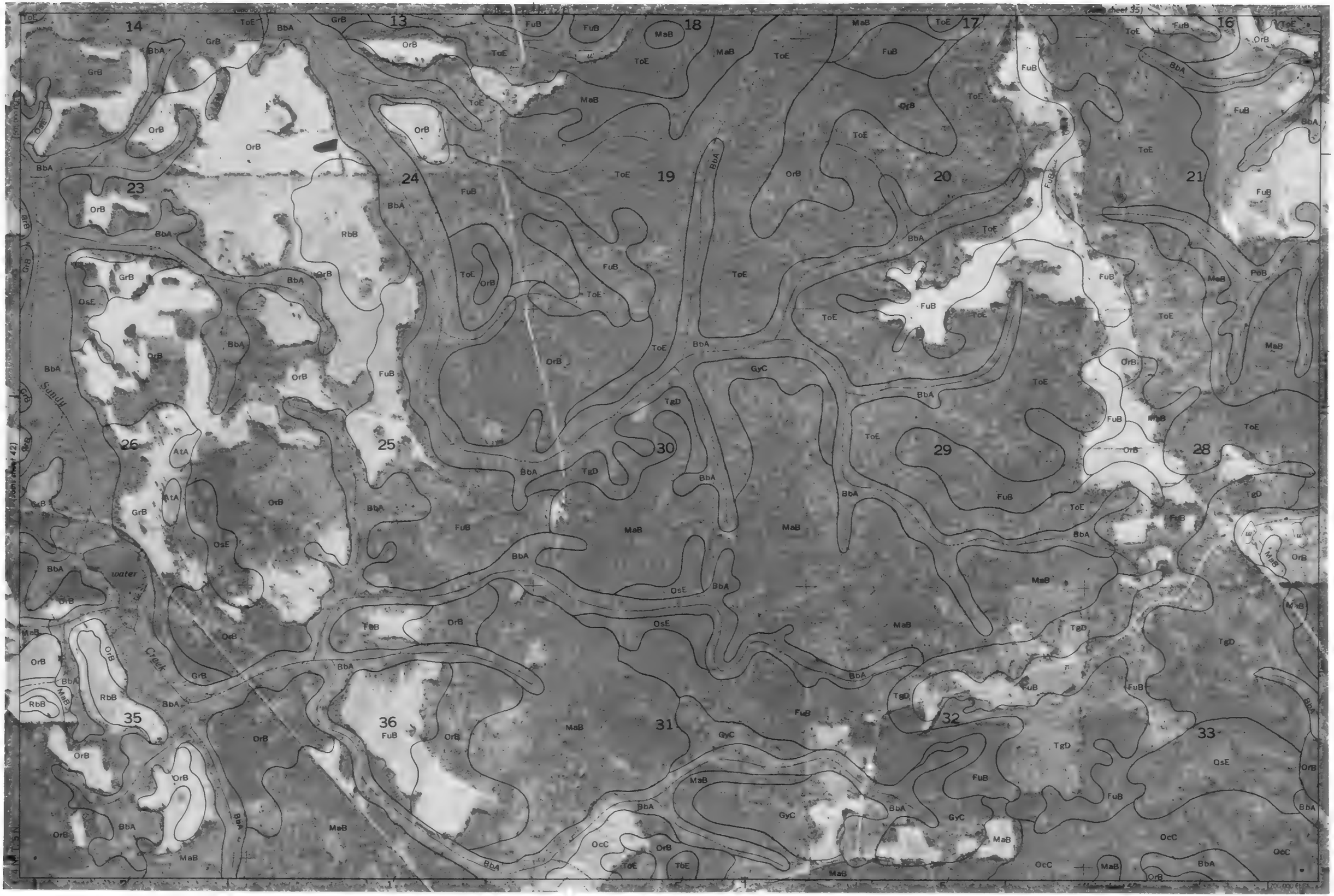
LOUISVILLE

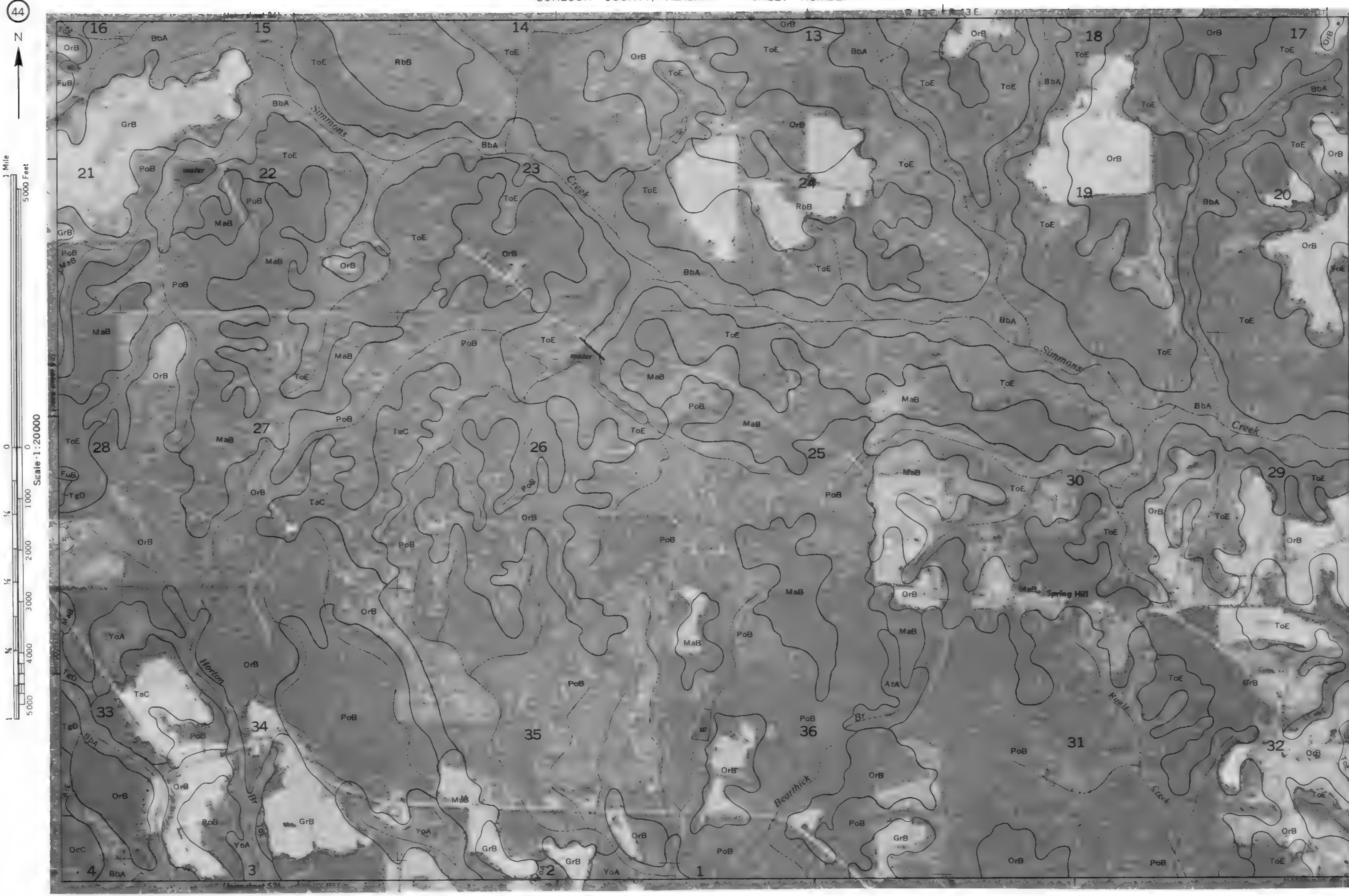
Old Sparta

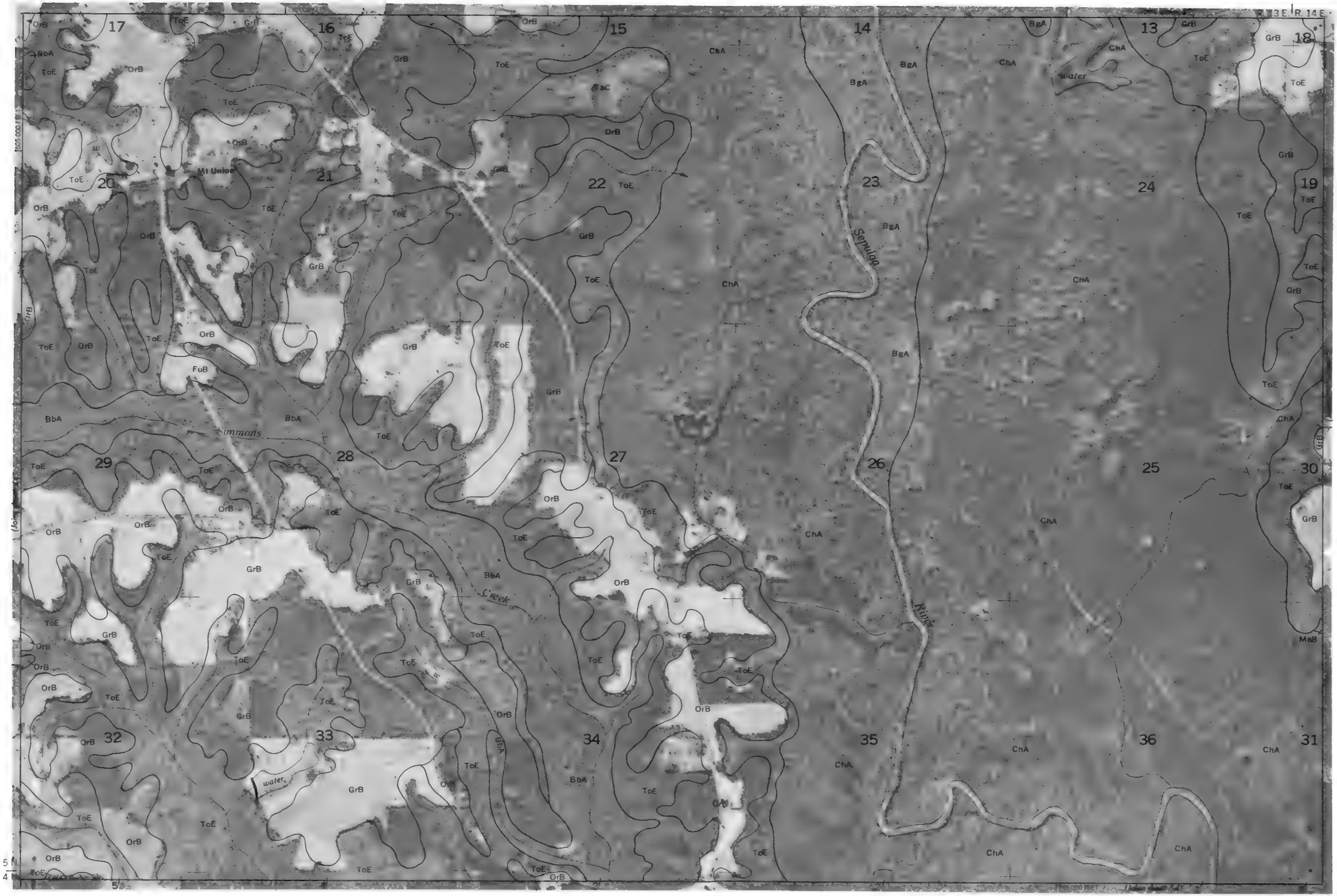
McMillan Pond

Jay Villa

water


43
N
1 Mile
5000 Feet
Scale 1:20000
14
13
18
17
16
23
24
19
20
21
26
25
30
29
28
35
36
31
32
33
ToE
BbA
GrB
OrB
FuB
MaB
RbB
OsE
GyC
TgD
AtA
PoB
OcC
Sandy
Creek
water


44
N
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000
Simmons Creek
Horton Br
Bearthick Br
Rawls Creek
Spring Hill
water
1
2
3
4
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
BbA
ToE
RbB
OrB
GrB
PoB
MaB
TaC
FuB
TgD
YoA
OcC
AtA


T. 3 N.
R. 13 E.
R. 14 E.
45
N
1 Mile
5000 Feet
Scale 1:20000
Mt Union
Simmons
Creek
Sepulga
River
water
17
16
15
14
13
18
20
21
22
23
24
19
29
28
27
26
25
30
32
33
34
35
36
31
5
4
OrB
ToE
GrB
BbA
BgA
ChA
FuB
MaB

46

N

1 Mile
5000 Feet
Scale 1:20000
0 0
½ 1000
½ 2000
¾ 3000
1 4000
5000

R. 6 E. R. 7 E.

COUNTY
MONROE
ESCAMBIA
COUNTY

25 30 31 36

GyC GrA GrB OrB TgD BbA TaC Pt

R. 7 E.

35 3 2 10 11 15 14 16 17 20 21 22 23

MaB

MONROE

Big Escambia Creek

Escambia Creek

R.7 E., R.8 E.

T. 5 N.
T. 4 N.

Escambia Creek

N

1 Mile
5000 Feet
Scale · 1 : 20000

CONECUH COUNTY, ALABAMA — SHEET NUMBER 48

48

N

1 Mile

5000 Feet

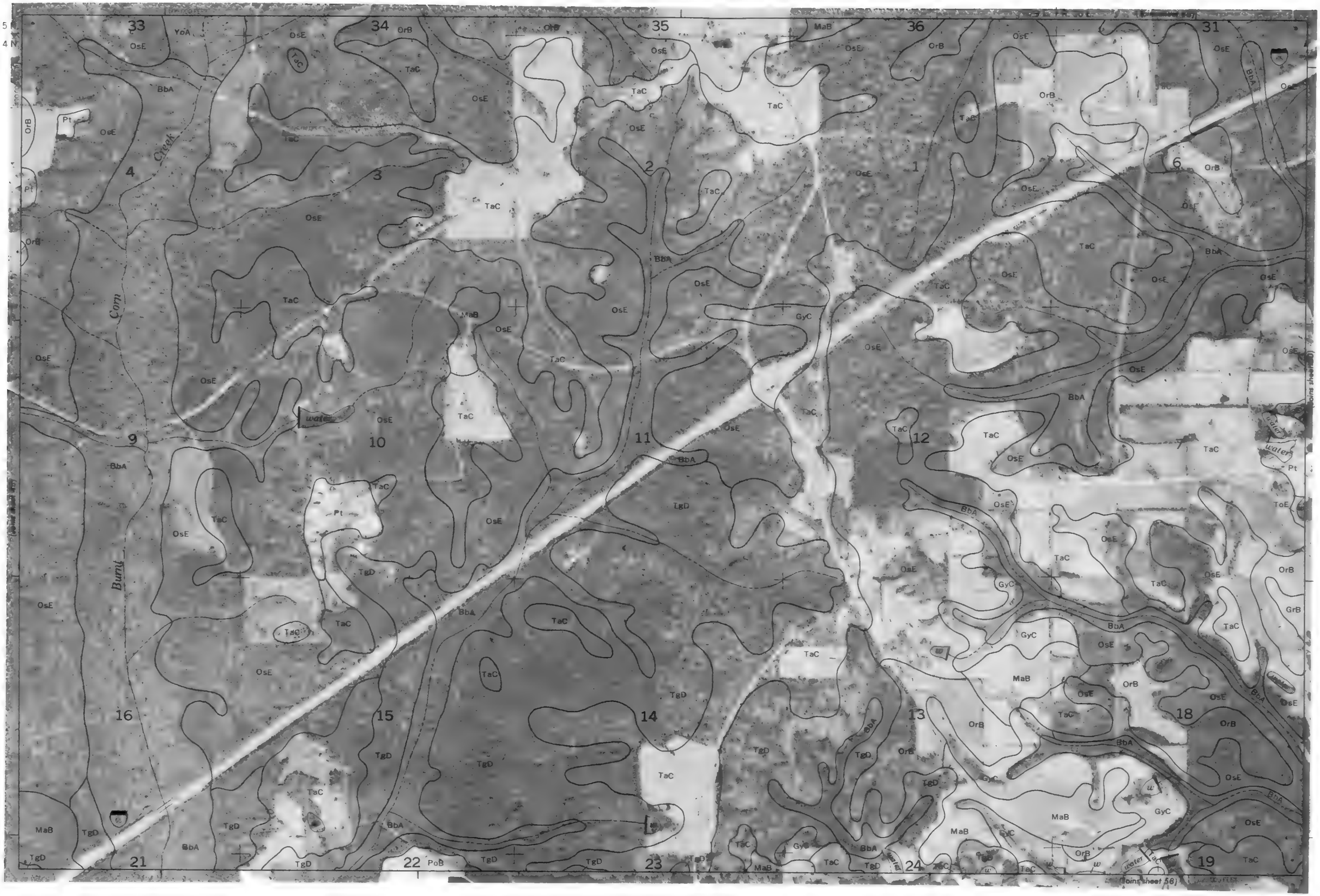
Scale 1:20000

R 8 E R 9 E

5 N

4 N

580 000 FEET


T. 5 N
T. 4 N
33
34
35
36
31
4
3
2
1
6
9
10
11
12
16
15
14
13
18
21
22
23
24
19
Corn Creek
Burnt
water
BbA
OsE
TaC
OrB
MaB
GyC
TgD
YoA
Pt
PoB
GrB
ToE
(Joins sheet 56)
(Joins sheet 50)
49
N
1 Mile
5000 Feet
Scale 1:20000

50

N

R. 10 E.

5 N.

4 N.

1 Mile

5000 Feet

Scale 1:20000

1000 2000 3000 4000 5000

Joins sheet 49

Joins sheet 51

Jordan

Creek

Panther

Creek

Murder

Creek

Castleberry

NASHVILLE AND LOUISVILLE

water

MaB OrB OsE GrB ToE TaC OcC PoB IbA BbA BgA BoA


R. 10 E.
R. 11 E.
T. 5 N.
T. 4 N.
Creek
Murder
Mill
Cedar
Murder Creek
water
Nymph
BoA
IbA
PoB
Pt
OsE
OrB
ToE
TaC
GrB
MaB
OcC
YoA
BgA
CbA
1 Mile
5000 Feet
Scale 1:20000
N
51

CONECUH COUNTY, ALABAMA — SHEET NUMBER 52

52

N

1 Mile

5000 Feet

Scale 1:20000

5 N.

4 N.

Sandy Creek

Cedar Creek

Little Cedar Creek

Cedar Creek

Cedar Creek

OrB OcC BbA MaB YoA ToE TaC OsE GtB

CONECUH COUNTY, ALABAMA — SHEET NUMBER 53

54

N T. 5 M
T. 4

Scale 1:20000
1 Mile
5000 Feet

(Joins sheet 53)

(Joins sheet 63)

Sections: 32, 33, 34, 35, 36, 31, 5, 4, 3, 2, 1, 6, 8, 9, 10, 11, 12, 17, 16, 15, 14, 13, 22, 23, 24

Soil symbols: OrB, ToE, BbA, PoB, GrB, RbB, MaB, TaC, CaA, ChA, FuB, BgA, AtA, CbA, BoA

Simmons Creek

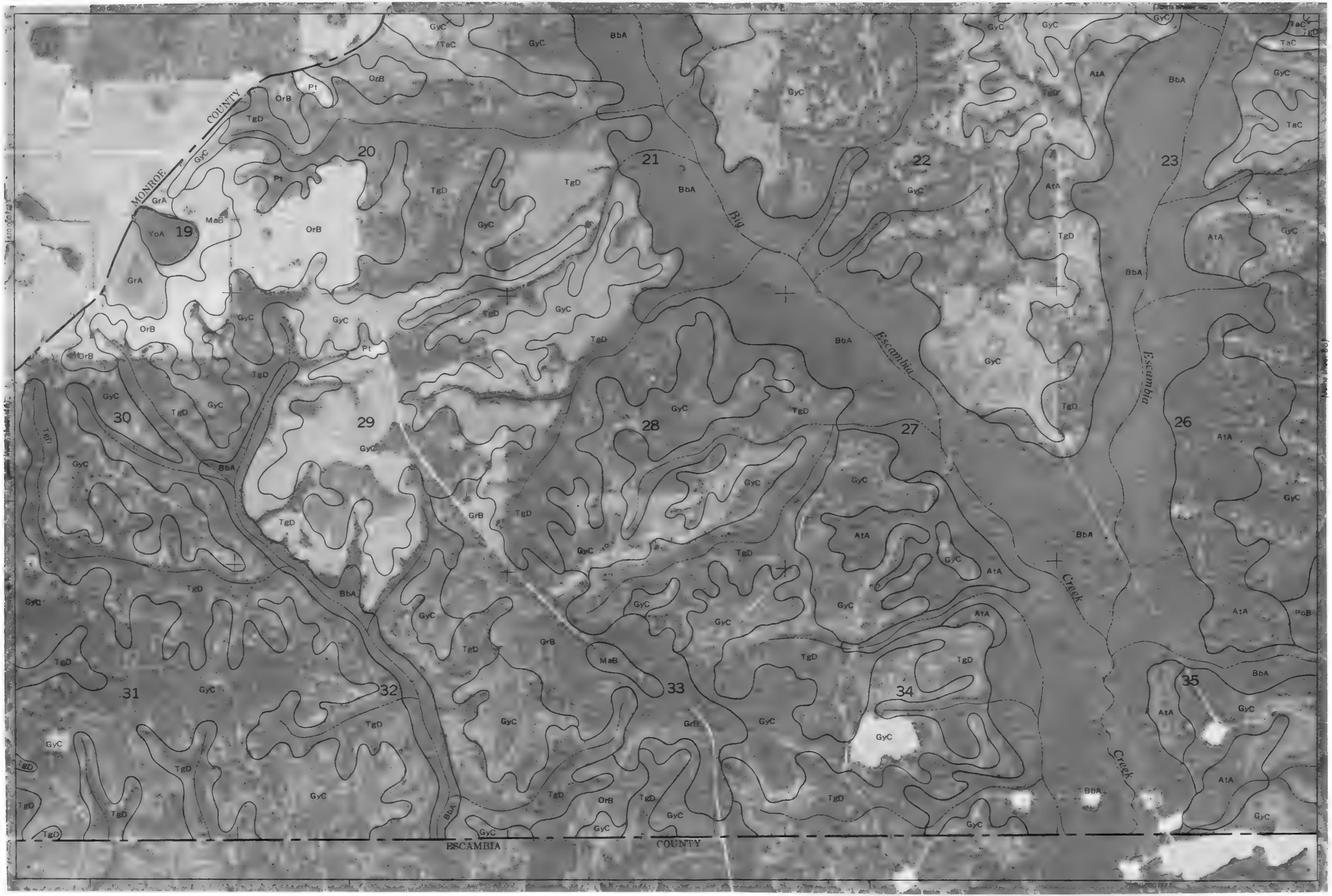
Pigeon Ck.

SEPULGA RIVER

COVINGTON COUNTY

Rile Ln.

Pate Pond



55

N

1 Mile

5000 Feet

Scale 1 : 20000

56

N

1 Mile 5000 Feet

0 0

Scale 1:20000

1 5000

½ 4000

¾ 3000

1 2000

¼ 1000

7E 1R 8E

19 20 21 22

24 23 26 25

30 29 28 27

31 32 33 34

35 36

TgD TaC GyC AtA OrB PoB BbA MaB

ESCAMBIA COUNTY

555,000 FEET

CONECUH COUNTY, ALABAMA — SHEET NUMBER 57

58

N

1 Mile

5,000 Feet

Scale 1:20000

0 0 1000 2000 3000 4000 5000

450 000 FEET

R. 9 E. | R. 10 E.

16 15 14 13

21 22 23 24 19

28 27 26 25 30

33 34 35 36 31

Burnt Creek

Brushy Creek

Corn Creek

Juniper Creek

water

ESCAMBIA COUNTY


59
N
1 Mile
5000 Feet
Scale · 1:20000
Panther Creek
Castleberry
London
Bear Creek
Murder Creek
water
ESCAMBIA COUNTY
LOUISVILLE AND NASHVILLE R.R.
TaC
OsE
IbA
BbA
FuB
MaB
OrB
TgD
PoB
DcC
ChA
BgA
CbA
GyC
CaA
AtA
Pt

60

N

1 Mile

5000 Feet

Scale 1:20000

0 0

1000 2000 3000 4000 5000

Creek

Mill

Creek

Murder

Creek

Murder

Creek

Shipps

Creek

Water

Water

Water

Water

Water

Shipps Pond

Ed Pond

L Pond

Weaver Pond

ESCAMBIA COUNTY

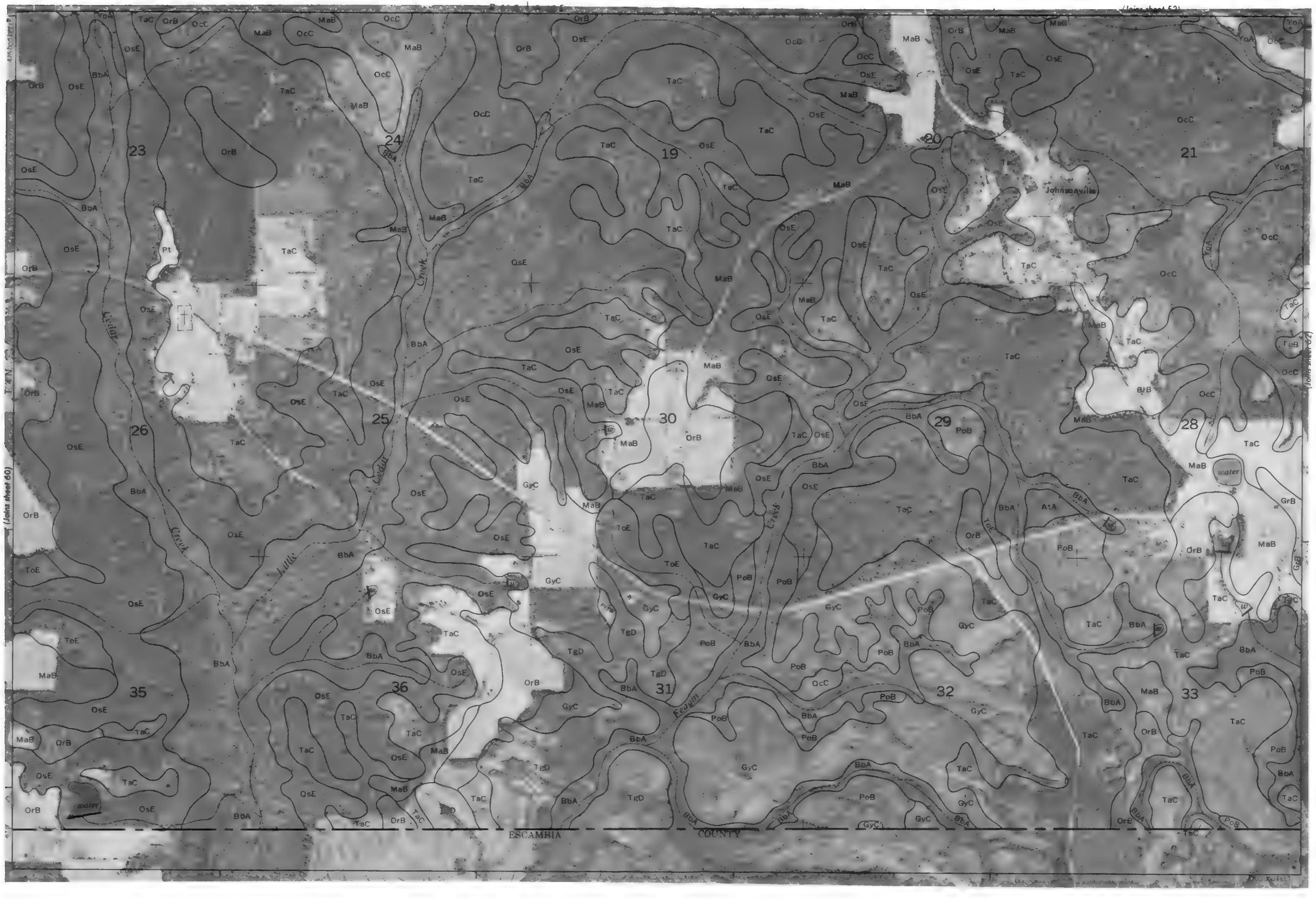
17 16 15 14

24 19 20 21 22 23

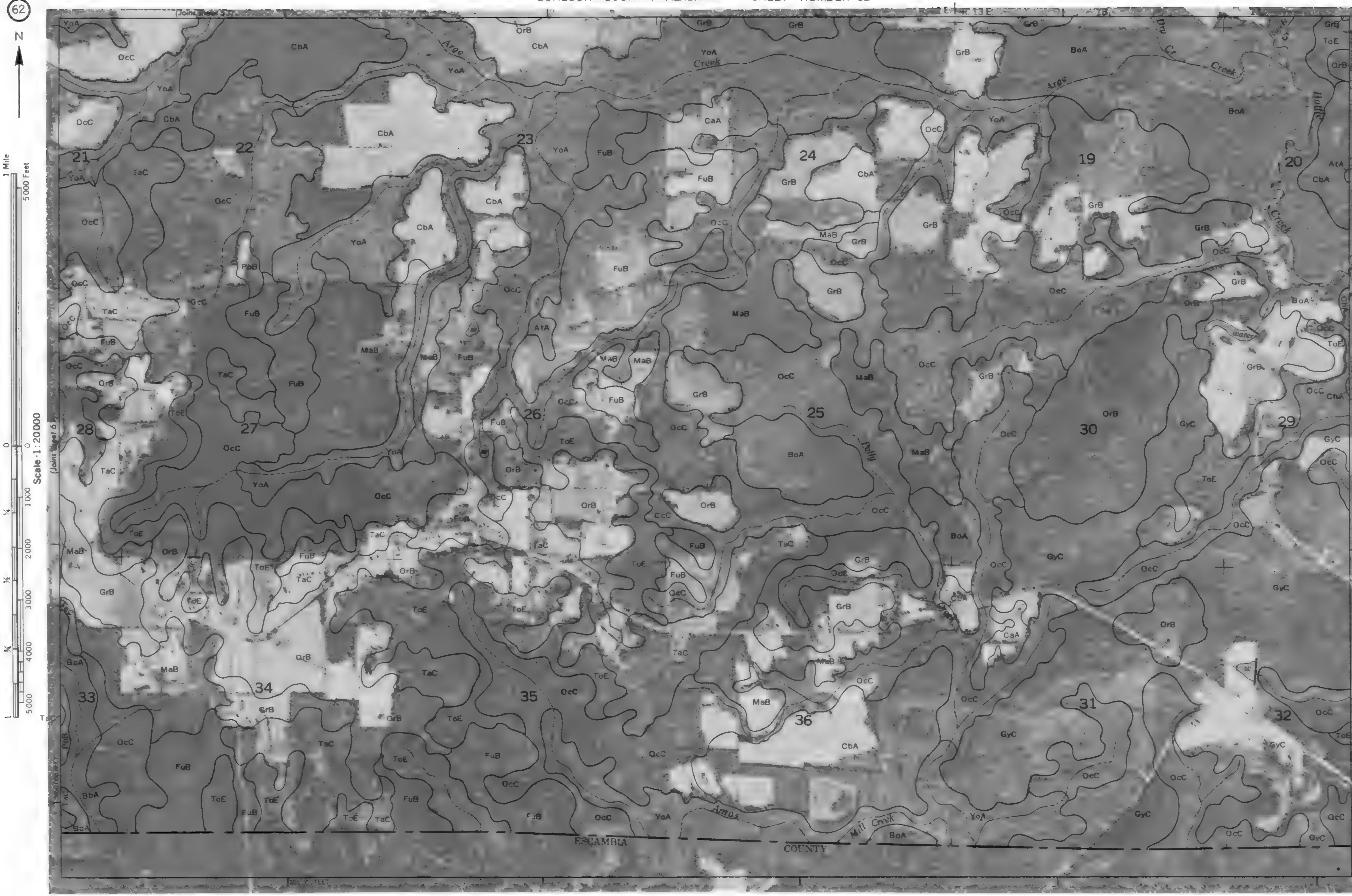
25 30 29 28 27 26

36 31 32 33 34 35

BgA CbA IbA OsE TaC GrB OrB MaB ToE BbA


61
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 60)
(Joins sheet 62)
Johnsonville
Cedar Creek
Hills Creek
Cedar Creek
Feagin Creek
ESCAMBIA COUNTY
water
23
24
25
26
19
20
21
30
29
28
35
36
31
32
33
TaC
OsE
OrB
MaB
OcC
BbA
GyC
PoB
TgD
ToE
YoA
AtA
GrB
PuB
Pt

CONECUH COUNTY, ALABAMA — SHEET NUMBER 62



CONECUH COUNTY, ALABAMA — SHEET NUMBER 63

63

N

1 Mile 5000 Feet

Scale 1:20000

0 0

¼ 1000

½ 2000

¾ 4000

1 5000

T. 4 N.

11 E.

(Joins sheet 54)

(Joins sheet 62)

(Joins sheet 64)

50,000 FEET

CONECUH COUNTY

ESCAMBIA COUNTY

Brooklyn

Pate Pond

Robinson Mill Creek

Rile Branch

Bottle Creek

Sepulga River

Hart Creek

Sepulga River

17 16 15 20 21 22 23 24 25 26 27 28 29 32 33 34 35 36 4 3 2 1

CONECUH COUNTY, ALABAMA — SHEET NUMBER 64

64

N

1 Mile

5000 Feet

Scale 1:20000

(Joins sheet 63)

R. 13 E.

Sepulga River

ESCAMBIA COUNTY

SEPULGA RIVER

COVINGTON COUNTY

water

ChA CbA GrB OrB ToE TaC FuB CwC MaB OcC BoA YoA LuC PoB

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

730 000 FEET

(Joins sheet 65)

N

1 Mile
5000 Feet
0
Scale 1:20000
1000
2000
3000
4000
5000

SOIL LEGEND

In the publication map symbol, the first letter, always a capital, is the initial letter of the first named taxon in the map unit. The second letter is either the initial of the second named taxon or is used for alphabetical purposes. The third letter, always a capital, is used to indicate slope. The miscellaneous area of pits is designated by the word "PITS."

SYMBOL	NAME
ArE	Arundel loamy fine sand, 4 to 25 percent slopes
AtA	Atmore fine sandy loam, 0 to 2 percent slopes
BbA	Bibb sandy loam, 0 to 1 percent slopes, frequently flooded
BgA	Bigbee sand, 0 to 1 percent slopes, rarely flooded
BoA	Bonneau loamy sand, 0 to 2 percent slopes
CaA	Cahaba sandy loam, 0 to 3 percent slopes, rarely flooded
CbA	Cahaba-Bigbee complex, 0 to 2 percent slopes, rarely flooded
ChA	Chrysler, occasionally flooded-Yonges, frequently flooded association, 0 to 2 to percent slopes
CoC	Conecuh sandy loam, 2 to 8 percent slopes
CwC	Cowarts sandy loam, 2 to 8 percent slopes
FuB	Fuquay loamy sand, 0 to 5 percent slopes
GrA	Greenville sandy loam, 0 to 1 percent slopes
GrB	Greenville sandy loam, 1 to 5 percent slopes
GuC	Greenville-Urban land complex, 0 to 7 percent slopes
GyC	Gritney-Malbis-Fuquay complex, 1 to 8 percent slopes
HaC	Halso sandy loam, 2 to 8 percent slopes
IbA	Izagora, rarely flooded-Bethera, occasionally flooded, association, 0 to 3 percent slopes
LuC	Luverne sandy loam, 2 to 8 percent slopes
LuD	Luverne sandy loam, 8 to 15 percent slopes
MaB	Malbis sandy loam, 1 to 6 percent slopes
OcC	Oktibbeha-Cadeville complex, 1 to 8 percent slopes
OsE	Oktibbeha-Saffell complex, 5 to 25 percent slopes
OrB	Orangeburg sandy loam, 1 to 6 percent slopes
OuC	Orangeburg-Urban land complex, 0 to 7 percent slopes
PITS	Pits
PoB	Poarch sandy loam, 0 to 5 percent slopes
RbB	Red Bay sandy loam, 1 to 5 percent slopes
TaC	Troup loamy sand, 2 to 8 percent slopes
TgD	Troup-Gritney-Saffell complex, 8 to 15 percent slopes
ToE	Troup-Orangeburg association, 8 to 25 percent slopes
YoA	Younges loam, 0 to 1 percent slopes, frequently flooded

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline and neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool

STATE COORDINATE TICK

LAND DIVISION CORNER (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate (21)
- Federal (175)
- State (28)
- County, farm or ranch (1283)

RAILROAD (label only)

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or Small (water, w)

PITS

- Gravel pit (as large as 3 acres)
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label) (Indian Mound)
- Located object (label) (Tower)
- Tank (label) (Gas)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label) (CANAL)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial (water, w)
- Intermittent (int, i)

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot
- Water (as large as 2 acres)

SPECIAL SYMBOLS FOR SOIL SURVEY

- SOIL DELINEATIONS AND SYMBOLS (CaA, GrB)
- ESCARPMENTS
  - Bedrock (points down slope)
  - Other than bedrock (points down slope)
- SHORT STEEP SLOPE
- GULLY
- DEPRESSION OR SINK
- SOIL SAMPLE (normally not shown) (S)
- MISCELLANEOUS
  - Blowout
  - Clay spot
  - Gravelly spot
  - Gumbo, slick or scabby spot (sodic)
  - Dumps and other similar non soil areas
  - Prominent hill or peak
  - Rock outcrop (includes sandstone and shale)
  - Saline spot
  - Sandy spot
  - Severely eroded spot
  - Slide or slip (tips point upslope)
  - Stony spot, very stony spot